ISSN 0738-9388

THE FESTIVUS
A publication of the San Diego Shell Club

Volume: XXXIII | December 14, 2001 | Occasional Paper 1

The Recent Molluscan Marine Fauna of Isla de Malpelo, Colombia

Kirstie L. Kaiser

Clayton W. Bryce

ISSN 0738-9388

THE RECENT MOLLUSCAN MARINE FAUNA OF ISLA DE MALPELO, COLOMBIA

KIRSTIE L. KAISER

Museum Associate, Los Angeles County Museum of Natural History,
Los Angeles, California 90007, USA
E-mail: KLKaiser@pvnet.com.mx

CLAYTON W. BRYCE

Department of Aquatic Zoology (Molluscs), Western Australian Museum,
Francis Street, Perth, Western Australia 6000, Australia
E-mail: clay.bryce@museum.wa.gov.au

14 December 2001

SMITHSONIAN
APR 18 2018
LIBRARIES

TABLE OF CONTENTS

ABSTRACT 1

INTRODUCTION 1

Island history 1

Physical environment 3

MATERIALS AND METHODS 5

Institutional abbreviations 6

Other abbreviations 6

RESULTS AND DISCUSSION 6

ACKNOWLEDGMENTS 8

LITERATURE CITED 8

APPENDIX 1: ANNOTATED CHECKLIST OF ISLA DE MALPELO MARINE MOLLUSKS 12

APPENDIX 2: ANNOTATED CHECKLIST OF DEEP-WATER SPECIES SURROUNDING

ISLA DE MALPELO 32

BLACK AND WHITE PLATES (1-49) 37

COLOR PLATE FIGURE LEGENDS 134

COLOR PLATES (1-5) 137

INDEX 147

THE RECENT MOLLUSCAN MARINE FAUNA OF ISLA DE MALPELO, COLOMBIA

KIRSTIE L. KAISER[1]

Museum Associate, Los Angeles County Museum of Natural History,
Los Angeles, California 90007, USA
E-mail: KLKaiser@pvnet.com.mx

CLAYTON W. BRYCE

Department of Aquatic Zoology (Molluscs), Western Australian Museum,
Francis Street, Perth, Western Australia 6000, Australia
E-mail: clay.bryce@museum.wa.gov.au

Abstract: In March-April 1998 and March 2000, the intertidal and subtidal, shallow-water communities of Isla de Malpelo, Colombia, were systematically explored. Prior to the present study, a total of 83 mollusks had been reported from Isla de Malpelo and the surrounding deep water. The current study, which includes figures and an annotated list, significantly increases the total number of known mollusks to 341 species.

Introduction

Marine faunas of remote oceanic islands are of biogeographic interest because they pose questions relating to dispersal and endemism in comparison to mainland faunas. There are five main oceanic islands or groups of islands in the tropical eastern Pacific: Islas Revillagigedo, México; Île Clipperton, French possession; Isla del Coco, Costa Rica; Isla de Malpelo, Colombia, and Islas Galápagos, Ecuador. Each are separated from the mainland by at least 435 km (Malpelo) and a maximum of 1300 km (Clipperton), and also by abyssal depths (Figure 1). The Galápagos are the largest group for which the molluscan fauna has been intensively studied (Finet, 1994; Kaiser, 1993, 1997). A number of recent expeditions have visited Isla del Coco, Île Clipperton and Islas Revillagigedo, although only preliminary reports have appeared (Montoya, 1983; Shasky, 1983a, 1989a; Chaney, 1992; Mulliner, 1993; Small, 1994; Emerson, 1995; Reyes Bonilla, 1999).

Until now, aside from brief reports of expedition material by Hertlein (1932), Birkeland et al. (1975) and von Prahl (1990), relatively little has been known of Isla de Malpelo's malacofauna compared with other oceanic islands of the tropical eastern Pacific.

It is our intention to expand on previous reports and to document and figure a representative specimen of the majority of species occurring at Isla de Malpelo with special attention given to the micromollusks (Appendices 1 and 2). Many of the micro-species listed herein, particularly in certain families, are unidentified below the family level. It is our view that without at least studying these species from the entire eastern Pacific, naming them would be unwise.

The core of the material treated in this paper was collected from two expeditions between 26 March and 2 April 1998 and 7 to 17 March 2000. The authors spent a total of fourteen days making collections, carrying out field observations and photographing the marine and island fauna of Isla de Malpelo (Figure 2).

Island history: Malpelo's history cannot compare with that of Darwin's Galápagos or the "Treasure Island" tales of Isla del Coco, but it does boast records of exploration dating back to 1542. The Spanish translation of Malpelo means "evil hair." According to

[1] Mailing address: Paseo de las Conchas Chinas #115-4, Puerto Vallarta, Jalisco CP 48390, Mexico.

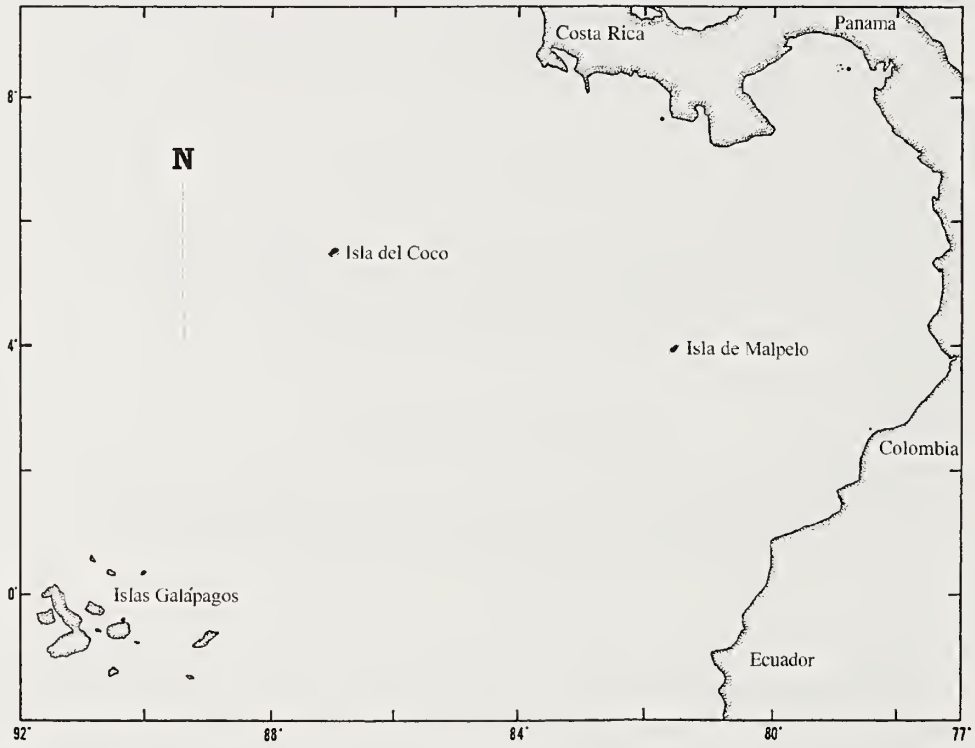

Figure 1. A chart showing the geographic relationship of the tropical eastern Pacific oceanic islands of Isla de Malpelo, Isla del Coco and Islas Galápagos. Chart not to scale.

Figure 2. A view of Isla de Malpelo, Colombia.

Gorman & Chorba (1975) the origin of this name is unknown but the island appears on a 1550 parchment map of the world in Desceliers (1550) housed in the Natural History Museum, London. The name on the map is "ye mallabry." The term, "malabrigo", was sometimes used by cartographers to designate islands and bays. "Malabrigo" translates to "evil overcoat" and means without shelter - a well deserved name! It has also been theorized that the word "Malpelo" has roots in the Latin "malveolus", literally "inhospitable" or "spiteful", which in the vernacular could have degenerated to "malbolo" and at some point interpreted as "malpelo." After visiting the island, we would like to add the distinct possibility of the name deriving from "malpelon". A Spanish translation for mal is "badly" and pelon is "hairless." Adding the two words together makes sense, as the barren island is quite stark and depauperate of vegetation.

The first record of a landing on Malpelo was in the late eighteenth century. It was not until the late nineteenth century that one of the first scientists, C.H. Townsend (1895), was to visit and gather birds from the island while aboard the U.S. Fish Commission Steamer *Albatross* during March 1891. In 1927, while on a trip to the Islas Galápagos with Captain A.G. Hancock aboard the S.S. *Oaxaca*, J. R. Slevin and a colleague from the California Academy of Sciences collected non-molluscan specimens at Malpelo's precipitous shoreline (Slevin, 1928).

The first reference to mollusks being collected was in December 1931. Two gastropods were collected at Malpelo by B.C. Perkins while on a cruise to the Islas Galápagos aboard the Allan Hancock Pacific Expedition's vessel, *Velero* III. These specimens were deposited in the California Academy of Sciences (Hertlein, 1932: 43). Then, just over two years later, on 16 January 1933, the *Velero* III again made a brief stop at Malpelo and five species of mollusks were gathered from the intertidal, including two of the same species collected during the 1931 expedition. These six lots are housed in the LACM.

Two other scientific expeditions were mounted within the first half of the century, although no mollusks were reported. In February 1937, the George Vanderbilt South Pacific Expedition visited Malpelo. Fowler (1938) and Bond and deSchauensee (1938) published some field notes by the Vanderbilt's collector Ronald Smith. Dr. Robert C. Murphy and another member of his party added to those findings while on an expedition aboard the schooner *Askoy* in March of 1941. Later, Murphy (1945) provided an exceptional summary of the natural history of the island.

Few other landings had been documented until on 28 February 1972 a group of 17 scientists representing the Smithsonian Tropical Research Institute (STRI), the Republics of Panamá and Colombia, and several U.S. universities embarked on a six day expedition to examine the marine and terrestrial biota of Isla de Malpelo. The expedition, a joint project of the U.S. Navy and STRI, was undertaken to gain a more comprehensive understanding of ecological processes and the natural history of plants and animals on Malpelo (Graham, 1975). The scientists consisted mostly of biologists who carried out field observations and conducted experiments both on the island and in its surrounding shallow waters. It was the first time the subtidal communities of Malpelo had been explored and recorded, including a comprehensive checklist of the phylum Mollusca (Birkeland et al., 1975). Wolda (1975), in his report of the ecosystem (terrestrial invertebrates) of Malpelo, reported two species of land snails that were fairly common in clusters under rocks. These specimens could not be located for identification.

Lastly, Henry von Prahl (1990), after two diving expeditions aboard the *Thornin,* published (in Spanish) information on the island including lists of birds and the terrestrial and submarine biota of Malpelo. Within the text there was mention of 12 species of mollusks in association with corals.

Physical environment: Isla de Malpelo, Colombia, is a small, geographically isolated, uninhabited eastern Pacific island. Its position is 435 km to the west of Colombia and to the south of Panamá at 03°59'07"N, 81°35'40"W. It represents the only emergent remnant of the Malpelo Ridge, a solitary volcanic submarine ridge that extends in a northeast-southwest direction with a length of 241 km and a width of 80 km (Chase, 1968). An oceanic island, Malpelo occurs outside the continental shelf and is separated from the mainland of Central America by depths greater than 3292 m. Isla de Malpelo has never been connected to other island masses or to the mainland, nor has it ever had shallow water between them (Graham, 1975). However, Glynn et al. (1983) considered that the Malpelo Ridge separated from the north-moving Cocos Ridge and has remained in its present position since late Miocene time. Depth soundings around the island indicate it was once eight to ten times larger than its present size. Marine weathering has eroded the island, forming steep cliffs, dangerous sea caves and towering arches along its sides

Figure 3. One of the many rock formations on Isla de Malpelo.

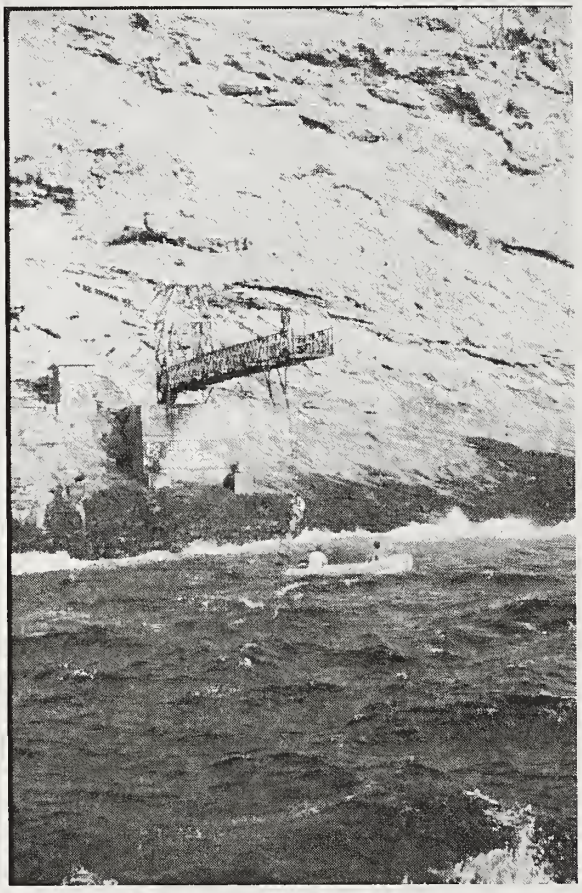

Figure 4. "The Dock" for receiving provisions at Isla de Malpelo.

(Stead, 1975) (Figure 3).

The Malpelo archipelago, which has the same orientation as the Malpelo Ridge, is 2.5 km in length and consists of the central island with ten smaller islets located no further than 500 m from the north and south confines (Kaiser, 2001). The two largest rock-structure groups are clustered to the north (North Rocks) and to the south (South Rocks) of the island (Figure 6). Stead (1975) describes the island as volcanic in origin, 6 km in circumference and the remnant of a much larger structure that has been steadily eroded by the persistent pounding of the sea. The island's perimeter consists of nearly vertical rock faces extending from 60 to 230 m above sea level (Figure 4).

The equatorial position of Malpelo combined with the steep exposed sides and crumbling rock faces have made the island an inhospitable environment devoid of plant cover. Unlike most tropical eastern Pacific oceanic islands, Malpelo is noted for its low terrestrial habitat diversity. The meager macrofauna consists of a terrestrial crab, two lizards, a gecko and various marine birds, some of them permanent residents (von Prahl, 1990). Guano occurs in limited deposits on the island.

The Malpelo subtidal zone is characterized by near vertical walls descending to a sand and rubble substratum. These walls consist of smooth basaltic rock descending to depths of 37 m on the central island and 50 m on the offshore sea mounts and sea stacks. The barnacles, *Megabalanus peninsularis* (Pilsbry, 1916) and *Megabalanus coccopoma* (Darwin, 1854), are sparsely distributed over the walls with a clear species zonation in the high surge zones from 3 to 12 m (Henry & McLaughlin, 1986). Birkeland et al. (1975) reported that 60 to 80 percent of the *Megabalanus* space was occupied by empty tests, providing a major habitat for motile animals and a substratum for sessile organisms. Also found on these walls were substantial populations of *Hipponix* spp. Below the cliffs, talus slopes of

turnable-size debris resting in a silty sand substrate were often encountered. Larger boulders and seamounts with clean, white-sand channels between them were also evident. It was at these deeper cliff-base stations where collecting was focused.

On the first expedition (1998), we were able to hazard only one dive on Malpelo's fringing coral reef on the northeast side (04°00.226'N, 81°36.247'W) because of strong El Niño winds. However, in 2000 we made six dives in this area which supports an extensive hermatypic coral community descending to 30 m on a gradual slope. According to Birkeland et al. (1975) this development does not constitute a true coral reef although the corals are prolific and depth zonation is marked for different species. This coral community, at the time, was considered to be the deepest known in the tropical eastern Pacific and was attributable to the clear water around Malpelo (Graham, 1975).

Turbidity of the water caused by runoff is negligible compared with Isla del Coco and coastal mainland areas. Combined with low rainfall, the small drainage area and virtual absence of topsoil dictate an absence of sediment input from runoff, allowing healthy coral assemblages. Birkeland et al. (1975) suggest that the reason for the lack of substantial coral development around the remainder of the island is probably due to the vertical walls where there is lower light intensity and the lack of horizontal support on which corals can effectively build a reef.

Materials and Methods

Each trip to Isla de Malpelo, Colombia, involved a rigorous 36-hour crossing from Golfito, Costa Rica, aboard the charter motor vessel, *The Inzan Tiger,* with arrival timed for early morning. At Malpelo, the preferred anchorage is on the southeast side (Figure 6) which was used in 2000. However in 1998, due to El Niño conditions, we had to anchor on the sheltered west side in a narrow inlet with sheer cliffs, called Off and On Bay (Figure 5). According to the Captain, this was not the normal anchorage of years past. This provided a rare opportunity to explore the island's southwest side including an area called South Rocks, which is normally too turbulent to dive.

Sea conditions surrounding the archipelago are a result of the steep bathymetry of Malpelo. Heavy surge and swift currents from wave trains hit the shoreline unimpeded by the frictional drag of a shallow coastline. These intense conditions made it necessary for all SCUBA diving operations to be staged from the aft deck of our charter vessel, *The Inzan Tiger,* instead of inflatable chase boats normally used by dive operators.

Field work during both visits involved three dives each day for a combined total of 60 underwater collecting hours at eight major dive sites (Figure 6) and several lesser sites around the island. Samples were accumulated from 73 dives and from depths of 2 to 58 m (6 to 190 ft). It was nearly impossible to manage productive collecting in the turbulent surge zone (0 to 7 m), and for the same reason, the intertidal community was sampled only once along the cliff base in Off and On Bay when the authors were put ashore to attempt a climb to the summit.

Faunal samples were mostly limited to the phylum Mollusca with emphasis on micromollusks and opisthobranchs. Sampling locations were established by means of Global Positioning Systems (GPS), Garmin Model 45. Water temperatures were measured using a Suunto EON dive computer. Microfaunal collecting was undertaken by shaking rocks, coral rubble, gorgonians and oyster shells into a canvas collecting bag. The "grunge" (sediment) was graded, rinsed in fresh water and dried in cotton bags for future sorting under a microscope. The smallest sediment samples were examined under 22X and the smallest adult taxon measured 0.6 mm. All micromollusks were examined by SEM as uncoated preparations at USC-CEMMA

The opisthobranchs were photographed, narcotized by cooling, then fixed in 5% formalin. Voucher specimens are stored in 75% special methylated spirits and are housed at the Western Australian Museum, Department of Aquatic Zoology (Molluscs). The cephalopods were photographed, narcotized by cooling and fixed in 80% ethyl alcohol (EtOH). Cephalopod DNA samples were also taken by snipping the tip of an arm and placing in 92% denatured EtOH. Voucher specimens are housed in the Santa Barbara Museum of Natural History, Department of Invertebrate Zoology. Other molluscan groups were placed directly into 80% EtOH for approximately three weeks, rinsed and then air dried, with wet specimens preserved in 92% EtOH. Voucher specimens are currently housed in the K.L. Kaiser Collection. The authors also made a limited echinoderm/crustacean (wet) collection with *in situ* photography by Bryce. The material is housed at the Natural History Museum of Los Angeles County, Department of Invertebrate Zoology and the California Academy of Sciences, Department of Invertebrate Zoology and Geology.

Figure 5. *The Inzan Tiger* anchored at Off and On Bay [fjord], Isla de Malpelo in 1998.

Institutional abbreviations: BMNH, Natural History Museum, London; CAS, California Academy of Sciences; FMNH, Field Museum of Natural History; LACM, Natural History Museum of Los Angeles County; SBMNH, Santa Barbara Museum of Natural History; SIO, Scripps Institution of Oceanography; SMNH, Swedish Museum of Natural History; STRI, Smithsonian Tropical Research Institute, Panamá; USC-CEMMA, University of Southern California-Center of Electron Microscopy and Micro Analysis; USNM, National Museum of Natural History, Smithsonian Institution; UG, University of Guam; UNC, University of North Carolina; UW, University of Washington; WAM, Western Australian Museum.
Other abbreviations: ENSO, El Niño - Southern Oscillation; H, height; L, length; ML, mantle length; SEM, Scanning Electron Microscope (Microscopy).

Results and Discussion

Our findings record 270 gastropods, 60 bivalves, 3 cephalopods, 2 scaphopods and 6 polyplacophorans. This represents a total of 341 species from 206 genera and 106 families, an increase of 258 species from previous studies and a gain of 311%. Zoogeographically, the molluscan fauna of Malpelo is mostly comprised of Panamic species of the eastern Pacific mainland. Some of the small-shelled, unidentified species will eventually be described as endemic to Malpelo. Only 2.6% of the species reported herein are Indo-Pacific in origin.

The following Indo-Pacific species from Malpelo occur at one or more oceanic islands of the tropical eastern Pacific as well as extending to the mainland of the Panamic Province:

1. *Dendrostrea folium* (Linnaeus, 1758): Islas Revillagigedo; Isla del Coco; Islas Galápagos.
2. *Spondylus linguaefelis* Sowerby, 1847: Islas Revillagigedo; Île Clipperton; Isla del Coco; Islas Galápagos.
3. *Talparia talpa* (Linnaeus, 1758): Isla del Coco.
4. *Bursa granularis* (Röding, 1798): Islas

Revillagigedo; Île Clipperton; Isla del Coco.
5. *Herviera gliriella* (Melvill & Standen, 1896): Isla del Coco; Islas Galápagos.

The following Malpelo records are Indo-Pacific species that have a known range which extends only as far east as the oceanic islands of the tropical eastern Pacific and are not known to reach the mainland:

1. *Coralliophila neritoides* (Lamarck, 1816): Islas Revillagigedo; Île Clipperton; Isla del Coco; Islas Galápagos.
2. *Persicula pulchella* (Kiener, 1843): Isla del Coco.
3. *Mitra ferruginea* Lamarck, 1811: Île Clipperton; Isla del Coco.
4. *Dendrodoris albobrunnea* Allen, 1933.

Recent expeditions to Islas Galápagos and Isla del Coco have revealed that a number of species formerly thought to be endemic to a single island or group of islands have distributions that are shared with other islands. These species, here called the "inter-island endemics" are not yet known from the mainland. Following are the Malpelo inter-island endemics:

1. *Condylocardia* sp. 1: ?Islas Galápagos.
2. *Pachystremiscus solitarius* (Hertlein & Allison, 1968): Île Clipperton; Isla del Coco.
3. *Fartulum* sp. 2: Isla del Coco.
4. *Chicoreus (Phyllonotus) eversoni* D'Attilio, Myers & Shasky, 1987: Isla del Coco.
5. *Muricopsis westonensis* Myers & D'Attilio, 1990: Isla del Coco.
6. *Favartia cocosensis* Myers & D'Attilio, 1990: Isla del Coco.
7. *Coralliophila rocasuciae* Myers & D'Attilio, 1990: Isla del Coco.
8. Coralliophilidae sp. 1: Isla del Coco; Islas Galápagos.
9. *Cantharus* sp. 1: Isla del Coco.
10. *Hypselodoris lapislazuli* (Bertsch & Ferreira, 1974): Islas Galápagos.

We experienced notable differences in oceanographic temperature between the two expeditions. An El Niño-Southern Oscillation (ENSO) event is presumably responsible for these discrepancies; in 1998, an El Niño year, the sea surface temperatures varied from 84°F at the surface to 78°F at diving depths. In contrast, the sea-surface temperatures were more typical

Figure 6. Chart of Isla de Malpelo showing major dive sites for 1998 and 2000: (1) Off and On Bay (2) Carl's Corner (3) South Rocks (4) Bombs Away (5) Coral Gardens (6) Hammer Wall (7) Tiger Mount (8) North Rocks. Chart not to scale.

in 2000 and ranged from 77° F at the surface to thermoclines reaching as low as 61°F at deeper diving depths. No inferences on relative abundance of species during the two visits to Malpelo can be made based on differing weather conditions, since the collecting sites were also different on the two trips.

Distances from the mainland and the extreme depths of water between the submarine ridges are significant barriers that could inhibit the colonization of many shallow-water marine organisms. The lack of habitat diversity around the island must also be a contributing factor. Colonization most likely occurs through the complex pattern of surface circulation of the ocean

currents. The intricate pattern of surface circulation in the tropical eastern Pacific Ocean provides insight as to how surface currents may serve for transport of planktotrophic larvae from the mainland to Isla de Malpelo and beyond. Malpelo is closer to the mainland than both Isla del Coco and Islas Galápagos. During the months from January to March the trade winds cause a strong current flow out of the Golfo de Panamá towards Malpelo, on to Isla del Coco and finally to Islas Galápagos. It is reasonable to assume it serves as a stepping-stone for marine forms en route from the mainland via oceanic currents to these islands. On the other hand, during the months from May to December the Equatorial Countercurrent is strong and flows from the Indo-Pacific (west to east) reaching in succession, Île Clipperton, Isla del Coco, and Isla de Malpelo before reaching mainland Central America where the current divides, with the majority flowing to the northwest.

Acknowledgments

We would like to acknowledge the following people for their help in identifying specimens: Penelope Barnes, STRI, Panamá (Lucinidae); Stephen D. Cairns, USNM (*Tubastraea*); Roger N. Clark, Kalamath Falls, Oregon (Polyplacophora); Eugene V. Coan, CAS (Bivalvia); Douglas J. Eernisse, CSU, Fullerton (Polyplacophora); Terrence M. Gosliner and Branch Central, CAS (Opisthobranchia); F.G. Hochberg, SBMNH (Cephalopoda); Kim Hutsell, San Diego, California (Spondylidae, Pectinidae); James H. McLean, LACM (Archaeogastropoda, micromollusks); David G. Reid, BMNH (Littorinidae); Roger R. Seapy and Daniel Nigro, CSU, Fullerton (Atlantidae, pteropods); Robert Van Syoc, CAS (*Megabalanus*); Ángel Valdés, LACM (Opisthobranchia); Anders Warén, SMNH (Eulimoidea).

We thank Charles E. Birkeland, UG; Jochen Gerber, FMNH; Raye Germon and Paul Greenhall, USNM, Smithsonian Institution; Jeffrey B. Graham, SIO; Lindsey T. Groves, LACM; Alan J. Kohn, UW and George Metz, CAS for researching their collections.

For various technical tasks we would like to recognize Henry W. Chaney, SBMNH, Lina González and Gabriel Jácome, STRI, and David K. Mulliner.

Our thanks to Zan and Captain Heinz Buchbinder and crew of M/V *The Inzan Tiger* for logistical support, the crew of the R/V *Urracá* (STRI) for early logistical information and to the government of the República de Colombia for allowing us to investigate Isla de Malpelo.

A special thank you to James H. McLean, Emeritus Curator of Mollusks, LACM, for critically reading the manuscript; Daniel L. Geiger, for preparation of the SEMs; Suzanne Parlett, for cover design and technical assistance; D. Ross Robertson, STRI, for locating the elusive USNM Malpelo collection; Carol Skoglund, for reviewing the USNM and Kaiser Malpelo collections; Conner W. Watts for technical assistance and Donald R. Shasky for giving the first author the opportunity to begin studying the oceanic islands.

And finally, to Carole M. and Jules Hertz for their proof-reading skills, literature searches and their endless support throughout the whole process.

Literature Cited

ABBOTT, R. TUCKER
1974. American Seashells. 2nd ed. Van Nostrand Reinhold Co., New York. 663 pp., 24 pls., 6405 figs.

BARTSCH, PAUL & HARALD A. REHDER
1939. Mollusks collected on the Presidential Cruise of 1938. Smithsonian Miscellaneous Collections 98(10): 1-18, pls. 1-5.

BEALS, MARTY
1995. Cowries of Clipperton. World Shells 14: 73-76, 6 unnumbered figs.

BERNARD, FRANK R.
1974. Septibranchs of the eastern Pacific (Bivalvia Anomalodesmata), with a proposed classification of septibranchs. The Venus 38(1): 14-24, figs. 1-2.

BERNARD, FRANK R., S. M. McKINNELL & G. S. JAMIESON
1991. Distribution and zoogeography of the Bivalvia of the eastern Pacific Ocean. Canadian Special Publication of Fisheries and Aquatic Sciences 112: 1-60, figs. 1-29.

BERTSCH, HANS & ANTHONY J. FERREIRA
1974. Four new species of nudibranchs from tropical west America. The Veliger 16(4): 343-353, figs. 1-27.

BIOLLEY, PAUL
1907. Mollusques de l'Isla del Coco. Museum Nacional de Costa Rica. Pp. 1-30, 2 maps.

BIRKELAND, CHARLES, DAVID L. MEYER, JAMES P. STAMES, & CARYL L. BUFORD
1975. Subtidal communities of Malpelo Island. *In* The Biological Investigation of Malpelo Island, Colombia. J.B. Graham (ed.). Smithsonian Contributions to Zoology 176: 55-68, figs. 20-27, tables 5-8.

BOND, J. & R. M. DESHAUENSEE
1938. Zoological Results of the George Vanderbilt South Pacific Expedition of 1937, Part II: The Birds of Malpelo Island, Colombia. Proceedings of the Academy of Natural Sciences of Philadelphia, 90: 155-157, pls. 9-11.

BOUCHET, PHILLIPE & ANDERS WARÉN
1980. Revision of the north-east Atlantic bathyal and abyssal Turridae (Mollusca, Gastropoda). Journal of Molluscan Studies, Supplement 8, 119 pp., 281 figs.

BURGESS, CLARENCE M.
1985. Cowries of the World. Gordon Verhoef, Seacomber Publications: 289 pp., 20 pls.
CANTERA-K., JAIME R.
1991. La superfamilia Cypraeacea en la costa Pacifica Colombiana (abstract). Primer Congreso Latinoamericano de Malacologia. Libro de Resumenes. 217 pp.
CATE, CRAWFORD N.
1969. The eastern Pacific cowries. The Veliger 12(I): 103-I19, pls. II-15, 3 maps.
CERNOHORSKY, WALTER O.
1976. The Mitridae of the world Part I. The subfamily Mitrinae. Indo-Pacific Mollusca 3(17): 273-528, pls. 1-466.
CHANEY, HENRY W.
1992. Interesting gastropods from the 1992 Cocos Island Expedition. The Festivus 24(8): 86-91, figs. I-11.
CHASE, R. E.
1968. Sea floor topography of the central eastern Pacific Ocean. U.S. Bureau of Commercial Fisheries, circular 291: 33 pp.
COAN, EUGENE V.
1988. Recent eastern Pacific species of the bivalve genus *Semele*. The Veliger 31(I/2): I-42, 64 figs.
COAN, EUGENE V., PAUL VALENTICH SCOTT & FRANK R. BERNARD
2000. Bivalve Seashells of Western North America. Marine Mollusks from Arctic Alaska to Baja California. Santa Barbara Museum of Natural History Monographs Number 2: 746 pp., I24 pls., many line drawings.
DALL, WILLIAM H.
1908. Reports on the dredging off the west coast of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U.S. Fish Commission steamer *"Albatross,"* during I891, Lieut. Commander Z.L. Tanner, U.S.N., Commanding, XXXVIII. The Mollusca and the Brachiopoda. Bulletin of the Museum of Comparative Zoology at Harvard College 43(6): 1-487, I9 pls., 3 maps.
D'ATTILIO, ANTHONY, BARBARA W. MYERS & DONALD R. SHASKY
1987. A new species of *Phyllonotus* (Muricidae: Muricinae) from Isla del Coco, Costa Rica. The Nautilus I0I(4): 162-165, figs. I-2.
DEBELIUS, H.
I996. Nudibranchs and Sea Snails - Indo-Pacific Field Guide. Ikan. 32I pp.
I998. Nudibranchs and Sea Snails - Indo-Pacific Field Guide. Ikan. 32I pp.
DESCELIERS, P.
1550. *Faicte a Arques . . . Ian* I550. Add. MSS 24065. British Museum (Natural History), London.
EMERSON, WILLIAM K.
1991. First records for *Cymatium mundum* (Gould) in the eastern Pacific Ocean, with comments on the zoogeography of the tropical trans-Pacific tonnacean and non-tonnacean prosobranch gastropods with Indo-Pacific faunal affinities in west American waters. The Nautilus I05(2): 62-80, figs. 1-24.
1994. A zoogeographic summary of the marine mollusks of Clipperton Island (tropical eastern Pacific Ocean). The Festivus 26(6): 62-71, 1 fig.
1995. A zoogeographic summary of the marine mollusks of the Revillagigedo Islands (tropical eastern Pacific Ocean). The Festivus 27(1): 3-18. 1 fig.
EVERSON, GENE
1984. In search of *Thais planospira*. The Festivus I6(10): I13-114, figs. I-2.
FINET, YVES
1994. The marine molluscs of the Galápagos Islands: a documented faunal list. Editions du Muséum d'Histoire Naturelle de Genève, I80 pp.
FOWLER, H. W.
I938. The Fishes of the George Vanderbilt South Pacific Expedition, I937. Monographs of the Academy of Natural Sciences of Philadelphia, 2: v+I-349 , 10 pls. [Malpelo, pp. 5-6.]
GLYNN, PETER W. & GERARD M. WELLINGTON
I983. Corals and Coral Reefs of the Galapagos Islands. University of California Press, Berkeley. 330 pp.
GLYNN, PETER W., J. E. N. VERON & GERALD M. WELLINGTON
1996. Clipperton Atoll (eastern Pacific): oceanography, geomorphology, reef-building coral ecology and biogeography. Coral Reefs 15: 71-99.
GORMAN, GEORGE C. & TERENCE L. CHORBA
I975. Terrestrial biology of Malpelo Island: A historical review. *In* The Biological Investigation of Malpelo Island, Colombia. J.B. Graham (ed.). Smithsonian Contributions to Zoology I76: 9-I2.
GOSLINER, TERRENCE M.
I990. Additions to the aeolidacean nudibranch fauna of the tropical eastern Pacific. Western Society of Malacologists Annual Report 22: I6.
I991. The opisthobranch gastropod fauna of the Galápagos Islands. *In* Matthew J. James, editor, Topics in Geobiology. Galápagos Marine Invertebrates 8: 281-305, illustr. Plenum Press, New York.
GRAHAM, JEFFREY B., editor
I975. The Biological Investigation of Malpelo Island, Colombia. Introduction. Smithsonian Contributions to Zoology I76: I-8, figs. I-5.
GRAU, GILBERT
1959. Pectinidae of the Eastern Pacific. Allan Hancock Pacific Expeditions 23: i-viii + I-308, pls. 1-57.
GROVES, LINDSEY T.
1992. California cowries (Cypraeacea): past and present, with notes on Recent eastern Pacific species. The Festivus 24(9): I01-I07.
HARRY, HAROLD W.
I985. Synopsis of the supraspecific classification of living oysters (Bivalvia: Gryphaeidae and Ostreidae). The Veliger 28(2): 121-I58, figs. I-30.
HENRY, DORA P. & PATSY A. McLAUGHLIN
1986. The Recent species of *Megabalanus* (Cirripedia: Balanomorpha) with special emphasis on *Balanus tintinnabulum* (Linnaeus) sensu lato. Zoologische Verhandelingen 235: 1-69, figs. I-14.
HERTLEIN, LEO G.,
1932. Mollusks and barnacles from Malpelo and Cocos Islands. The Nautilus 46(2): 43-45.
HERTLEIN, LEO G. & EDWIN C. ALLISON
1960. Gastropods from Clipperton Island. The Veliger 3(1): 13-15.

1968. Descriptions of new species of gastropods from Clipperton Island. Occasional Papers of the California Academy of Sciences 66: 1-13, figs. 1-13.

HERTLEIN, LEO G. & WILLIAM K. EMERSON
1957. Additional notes on the invertebrate fauna of Clipperton Island. American Museum Novitates., no. 1859, 9 pp., 1 fig.

HERTZ, JULES & KIRSTIE L. KAISER
1998a. *Colubraria (Colubraria) ochsneri* and *Colubraria (C.) lucasensis* from Isla del Coco, Costa Rica. The Festivus 30(3): 35-39, figs. 1-15.
1998b. Correction. The Festivus 30(8): 84 [corrects locality of *Colubraria (C.) lucasensis*].

HICKMAN, CLEVELAND P., JR. & YVES FINET
1999. A Field Guide to Marine Mollusks of Galápagos. An Illustrated Guide Book to the Common Intertidal and Shallow-water Snails, Bivalves, and Chitons of the Galápagos Islands. Sugar Spring Press, Lexington, Virginia. 150 pp., 258 figs.

KAISER, KIRSTIE L.
1993. An overview of the known Recent micromolluscan marine fauna of the Islas Galápagos including microfaunal list. The Festivus 25(10): 90-109, figs. 1-16.
1997. The Recent molluscan marine fauna of the Islas Galápagos. The Festivus 29 (Supplement): 67 pp.
1998. *Cypraea talpa* on eggs and a live *Cymatium (Gutturnium) muricinum*, both at Isla del Coco, Costa Rica.
2001. Comments on four muricoidean (Mollusca: Gastropoda) species formerly endemic to Isla del Coco found at Isla de Malpelo. The Festivus 33(1): 3-7, 1 color pl., 1 table.

KEEN, A. MYRA
1971. Sea Shells of Tropical West America, 2nd ed., Stanford University Press, Stanford. xiv + 1-1064 pp., 22 pls., ca. 4000 figs.

KNUDSEN, JØRGEN
1970. The Systematics and Biology of Abyssal and Hadal Bivalvia. Galathea Report, vol. 11, pp.1-241, pls. 1-20.

MARINCOVICH JR., LOUIE
1977. Cenozoic Naticidae (Mollusca:Gastropoda) of the Northeastern Pacific. Bulletins of American Paleontology 70(294): 165-494, pls. 17-42, text figs. 1-13, tables 1-6.

MONTOYA, MICHEL
1983. Los moluscos marinos de la Isla del Coco, Costa Rica. I. Lista anotada de especies. Brenesia 21: 325-353.

MOORE, ELLEN
1984. Tertiary marine pelecypods of California and Baja California: Propeamussiidae and Pectinidae. United States, Department of the Interior, Geological Survey, Professional Paper 1228B: iv +112 pp., 42 pls.

MULLINER, DAVID K.
1993. Opisthobranchs of Cocos Island. The Western Society of Malacologists Annual Report [for 1992] 25: 2-3.

MURPHY, R. C.
1945. Island Contrasts. Natural History 54: 14-23.

MYERS, BARBARA W. & ANTHONY D'ATTILIO
1990. Three new muricacean species from Cocos Island, Costa Rica (Muricidae and Coralliophilidae). The Venus 49(4): 281-292, figs. 1-16.

PONDER, WINSTON F. & ANDERS WARÉN
1988. Classification of the Caenogastropoda and Heterostropha - a list of the family-group names and higher taxa. Malacological Review (Supplement 4): 288-326.

RADWIN, GEORGE E.
1974. Columbellid genera of the eastern Pacific. The Festivus 5(1): 88-90.

REID, DAVID
1999. The genus *Littoraria* Griffith & Pidgeon, 1834 (Gastropoda: Littorinidae) in the tropical eastern Pacific. The Veliger 42(1): 21-53, figs. 1-12.

REID, DAVID & KIRSTIE L. KAISER
2001. Three new records of Indo-West Pacific Littorinidae (Gastropoda) in the tropical eastern Pacific. The Veliger 44(4): 381-388, figs. 1-2.

REYES BONILLA, HÉCTOR
1999. Additions to the 1995 summary of marine mollusks of the Islas Revillagigedo (tropical eastern Paciafic Ocean, México. The Festivus 31(3): 31-40, 1 map.

RUDMAN, W.B.
1984. The Chromodorididae (Opisthobranchia: Mollusca) of the Indo-West Pacific: a review of the genera. Zoological Journal of the Linnean Society 81(2-3): 115-273, figs. 1-105.

SEAPY, ROGER R. & CATHERINE THIRIOT-QUIÉVREUX
1994. Veliger larvae of Carinariidae (Mollusca: Heteropoda) from Hawaiian waters. The Veliger 37(4): 336-343, figs. 1-16, tables 1-2.

SHASKY, DONALD R.
1983a. New records of Indo-Pacific Mollusca from Cocos Island, Costa Rica. The Nautilus 97(4): 144-145.
1983b. Update on mollusks with Indo-Pacific faunal affinities in the tropical eastern Pacific-II. The Festivus 15(11): 109-110.
1984. Update on mollusks with Indo-Pacific faunal affinities in the tropical eastern Pacific. III. The Festivus 16(11): 123-124, figs. 1-3.
1986a. Update on mollusks with Indo-Pacific affinities in the tropical eastern Pacific IV. The Festivus 18(1): 3-5, figs.1-8.
1986b. Update on mollusks with Indo-Pacific faunal affinities in the tropical eastern Pacific. IV. Annual Report of the Western Society of Malacologists [for 1985] 18: 27 [abstract].
1987. Update on mollusks with Indo-Pacific faunal affinities in the tropical eastern Pacific - Part V. The Festivus 19(6): 48-50, figs. 1-4.
1989a. An update on the mollusks from the Galapagos Islands as listed in "Preliminary faunal list of the marine mollusks of the Galapagos Islands" by Yves Finet. The Festivus 21(1): 7-10.
1989b. The family Omalogyridae in the tropical eastern Pacific. The Festivus 21(2): 17, 1 fig.
1989c. My last seven years - at Cocos Island. The Festivus 21(8): 72-75, figs. 1-4.
1996a. Distributional records of interesting and rarely collected marine gastropods from the tropical eastern Pacific. The Festivus 28(4): 35-40, figs. 1-11.
1996b. Additional distributional records of interesting and rarely collected marine gastropods (Epitoniidae) from the tropical eastern Pacific. The Festivus 28(8): 85-86.
1997. New range, depth and size records for some Panamic Province gastropods 29(6): 45-52, figs. 1-13.

SKOGLUND, CAROL
1991. Additions to the Panamic Province Opisthobranchia (Mollusca) Literature 1971 to 1990. The Festivus 22

(Supplement 1): iii + 1-27.

1992. Additions to the Panamic Province Gastropod (Mollusca) Literature 1971-1992. The Festivus 24 (Supplement): viii + 1-169.

2000. *Spondylus linguaefelis* Sowerby, 1847 (Bivalvia: Spondylidae) in the Panamic Province, with notes on the occurrence of *Spondylus nicobaricus* Schreibers, 1793. The Festivus 32(1): 3-7, figs. 1-4, 1 pl.

2001. Panamic Province Molluscan Literature Additions and Changes from 1971 through 2000. I Bivalvia II Polyplacophora. The Festivus 32 (Supplement): i-v + 1-119 (Bivalvia); i +1-20 (Polyplacophora).

SLEVIN, J.R.

1928. Description of a new species of lizard from Malpelo Island. Proceedings of the California Academy of Sciences, ser. 4, vol 16(21): 681-684, pls. 25, 26.

SMALL, MICHAEL

1994. Clipperton '94: an initial report. The Festivus 25(7): 78-83, figs. 1-3.

SMITH, JUDITH TERRY

1991. Cenozoic giant pectinids from California and the Tertiary Caribbean Province: *Lyropecten, "Macrochlamis," Vertipecten,* and *Nodipecten* species. United States, Department of Interior, Geological Survey Professional Paper 1391: 155 pp., 38 pls.

SMITH, MAXWELL

1939. An Illustrated Catalog of the Recent Species of the Rock Shells. Tropical Photographic Laboratory, Lantana, Florida. Pp. ix+83, 21 pls.

STEAD, JEFFREY A.

1975. Field observations on the geology of Malpelo Island *In*: The Biological Investigation of Malpelo Island, Colombia. J.B. Graham (ed.). Smithsonian Contributions to Zoology 176: 17-20, figs. 6, 7.

STRONG, ARCHIBALD M. & G. DALLAS HANNA

1930. Marine Mollusca of the Revillagigedo Islands, Mexico. Proceedings of the California Academy of Sciences, fourth series 29(2): 7-12.

TAYLOR, JOHN D., YURI I. KANTOR & ALEXANDER V. SYSOEV

1993. Foregut anatomy, feeding mechanisms, relationships and classification of Conoidea (= Toxoglossa) (Gastropoda). Bulletin of the Natural History Museum of London (Zoology) 59(2): 125-170.

TOWNSEND, C. H.

1895. Birds From Cocos and Malpelo Islands, with notes on petrels obtained at sea. Bulletin of the Museum of Comparative Zoology, 27: 121-126, 1 pl.

VAUGHT, KAY CUNNINGHAM

1989. A Classification of the Living Mollusca. American Malacologists, Inc., 195 pp.

VERMEIJ, GEERAT J. & SILVARD P. KOOL

1994. Evolution of labral spines in *Acanthais*, new genus, and other rapanine muricid gastropods. The Veliger 37(4): 414-424, figs. 1-9.

VERMEIJ, GEERAT J. & S.J. CARLSON

2000. The muricid gastropod family Rapaninae: phylogeny and ecological history. Paleobiology 26:10-46.

VON PRAHL, HENRY

1990. Malpelo la roca viviente. FEN COLOMBIA, Editorial Presedencia Ltda., Bogotá, Colombia, 57 pp., 27 figs.

WARÉN, ANDERS

1992. New and little known skeneimorph gastropods from the Mediterranean Sea and the adjacent Atlantic Ocean. Bollettino Malacologico 27(10-12): 149-248, figs. 1-47.

WOLDA, HENK

1975. The biological investigation of Malpelo Island, Colombia. The ecosystem on Malpelo Island. Smithsonian Contributions to Zoology 176: 21-26, Table 1, figs. 8-12.

APPENDIX 1: ANNOTATED CHECKLIST OF ISLA DE MALPELO MARINE MOLLUSKS

This Checklist consists of three-columns. The first column contains both the plate and figure legend number(s) for each species figured. The second column lists the taxa and authors. Species are arranged in taxonomic order according to Keen (1971), as modified by Skoglund (1991, 1992, 2001), Ponder & Warén (1988), Vaught (1989), and Taylor, Kantor & Sysoev (1993). The third column, "Literature Sources/Remarks" contains as its first entry, the initial published record for each species occurring at Malpelo. This is followed by additional records with museum numbers where applicable, (wet) status in the collections, whether collected living (in parentheses), photograph references, size, rejected or unconfirmed records and subsequent tropical eastern Pacific oceanic island distributional records. We were unable to locate the specimens in the small checklist of the coral-associated mollusks in von Prahl (1990). After contacting the editor of FEN-COLOMBIA, it was found that the author is deceased. Lastly, those records listed by Birkeland et al. (1975) as "sp." were not verifiable and are rejected herein. Unless otherwise noted, all citations from other tropical eastern Pacific islands are those of K.L. Kaiser.

Plate/ Figure	List of Species	Literature Sources/Remarks
BIVALVIA		
ARCIDAE		
Pl. 1, figs. 1, 1a	*Arca* (*Arca*) *mutabilis* (Sowerby, 1833)	Birkeland et al., 1975, USNM (live); reported at Isla de Malpelo, Colombia, and Isla del Coco, Costa Rica (Bernard et al., 1991); K.L. Kaiser Collection (live).
Pl. 1, fig. 2	*Acar gradata* (Broderip & Sowerby, 1829)	K.L. Kaiser Collection (live); as *Barbatia*, reported at Isla del Coco, Costa Rica (Bernard et al., 1991).
Pl. 1, figs. 3, 3a	*Barbatia* (*Cucullaearca*) *reeveana* (d'Orbigny, 1846)	Birkeland et al., 1975, specimen(s) not seen by authors; reported at Isla de Malpelo, Colombia, and Isla del Coco, Costa Rica (Bernard et al., 1991); K.L. Kaiser Collection (live).
PHILOBRYIDAE		
Pl. 1, figs. 4, 4a	*Philobrya setosa* (Carpenter, 1864)	K.L. Kaiser Collection (single valve), 2.5 mm H.
MYTILIDAE		
Pl. 2, fig. 1	*Lithophaga* (*Diberus*) *plumula* (Hanley, 1843)	Birkeland et al., 1975, USNM (live); reported at Isla de Malpelo, Colombia, and Isla del Coco, Costa Rica (Bernard et al., 1991); K.L. Kaiser Collection.
Pl. 2, fig. 2	*Lithophaga* (*Myoforceps*) *aristata* (Dillwyn, 1817)	Birkeland et al., 1975, USNM (live); Bernard et al., 1991; K.L. Kaiser Collection (live), largest specimen 24.8 mm; reported at Isla del Coco, Costa Rica (Montoya, 1983).
Pl. 2, fig. 3	*Leiosolenus laevigata* (Quoy & Gaimard, 1835)	K.L. Kaiser Collection, largest specimen 26.3 mm.

Pl. 2, fig. 4	*Septifer zeteki* Hertlein & Strong, 1946	Birkeland et al., 1975, USNM (live); reported at Isla de Malpelo, Colombia, and Isla del Coco, Costa Rica (Bernard et al., 1991); K.L. Kaiser Collection (wet), (live), largest specimen 11.5 mm.
PTERIIDAE		
Pl. 2, fig. 5	*Pteria sterna* (Gould, 1851)	K.L. Kaiser Collection (live), single specimen 71.0 mm; reported at Isla del Coco, Costa Rica (Bernard et al., 1991).
Color Pl. 1, fig. 1	*Pinctada mazatlanica* (Hanley, 1856)	von Prahl, 1990; K.L. Kaiser Collection (live), largest specimen 140.0 mm; reported at Isla del Coco, Costa Rica (Bernard et al., 1991).
ISOGNOMONIDAE		
Pl. 3, fig. 1	*Isognomon* (*Melina*) *janus* Carpenter, 1857	K.L. Kaiser Collection (wet), (live), largest specimen 37.7 mm; reported at Isla del Coco, Costa Rica (Emerson, 1994).
Pl. 3, figs. 2, 2a	*Isognomon* (*Melina*) cf. *recognitus* (Mabille, 1895)	Birkeland et al., 1975, USNM (live); as *Isognomon quadratus* (Anton, 1837, *non* Sowerby, 1835) in Bernard et al. (1991); K.L. Kaiser Collection, single specimen 23.8 mm; synonym *Perna quadratus* (Anton, 1837, *non* Sowerby, 1835) (Coan et al., 2000); reported at Isla del Coco, Costa Rica (Biolley, 1907).
MALLEIDAE		
Pl. 3, fig. 3	*Malleus* (*Malvufundus*) cf. *regulus* (Forskål, 1775)	USNM (live), collected by Birkeland et al. in 1972, not listed in Birkeland et al. (1975); K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Shasky, 1986a).
PINNIDAE		
Pl. 3, fig. 4	Pinnidae sp. 1	K.L. Kaiser Collection (live, juvenile).
LIMIDAE		
Pl. 3, figs. 5, 5a	*Limatula* (*Limatula*) cf. *similaris* (Dall, 1908)	K.L. Kaiser Collection (single valve, 4.5 mm); reported at Isla del Coco, Costa Rica (Bernard et al., 1991).
OSTREIDAE		
---	*Crassostrea ?prismatica* (Gray, 1825)	as *Ostrea* (? *iridescens* Hanley) in Birkeland et al. (1975); as *Striostrea prismatica* in Bernard et al. (1991) [citing Birkeland et al. (1975) record]; species not collected by authors; Birkeland et al. (1975) specimens reidentified as Ostreidae sp. 1, delete Malpelo record herein.
Pl.4, fig. 1	*Dendostrea folium* (Linnaeus, 1758)	USNM (live), collected by Birkeland et al. in 1972, not listed in Birkeland et al. (1975); K.L. Kaiser Collection (live), on *Eucidaris thourarsi* spines; as *Lopha* reported at Isla del Coco, Costa Rica (Shasky, 1986b); Islas Galápagos (Bernard et al. (1991); occurs at Islas Revillagigedo, Mexico.

Pl.4, fig. 2	Ostreidae sp. 1	USNM (live), not listed in Birkeland et al. (1975); K.L. Kaiser Collection (live).
Pl.4, figs. 3, 3a	Ostreidae sp. 2	K.L. Kaiser Collection (live).
Pl.5, fig. 1	Ostreidae sp. 3	K.L. Kaiser Collection (live).
Pl.5, fig. 2	Ostreidae sp. 4	K.L. Kaiser Collection, (live, ? juvenile).
Pl.5, fig. 3	Ostreidae sp. 5	K.L. Kaiser Collection (live).
GRYPHAEIDAE		
Pl.5, fig. 4	*Hyotissa hyotis* (Linnaeus, 1758)	as *Ostrea fisheri* Dall in Birkeland et al. (1975), specimen(s) not seen by authors; von Prahl (1990); *O. fisheri* synonym of *Hyotissa hyotis* (Harry, 1985); K.L. Kaiser Collection (live), largest specimen 165.0 mm; occurs at Isla del Coco, Costa Rica (live).
---	*Hyotissa solida* (Sowerby, 1871)	Bernard et al. (1991) listed the Indo-Pacific species *H. solida*, while stating that there are no Indo-Pacific elements present [we feel that they were citing the record of *H. hyotis*], further confirmation needed, delete Malpelo record herein; reported at Isla del Coco, Costa Rica (Bernard et al., 1991).
PECTINIDAE		
Pl.6, fig. 1	*Oppenheimopecten perulus* (Olsson, 1961)	K.L. Kaiser Collection (live); raised from subgenus (Moore, 1984); reported at Isla del Coco, Costa Rica (Bernard et al., 1991).
Color Pl. 1, fig. 2: Pl.6, figs. 2, 2a	*Nodipecten arthriticus* (Reeve, 1853)	K.L. Kaiser Collection (live).
---	*Nodipecten subnodosus* (G.B. Sowerby I, 1835)	as *Lyropecten* in Bernard et al. (1991); LACM record in Bernard et al. (1991) is erroneous (pers. comm. L.T. Groves, E.V. Coan, 2001), delete Malpelo record herein; reported at Isla del Coco, Costa Rica (Montoya, 1983; J.T. Smith, 1991).
PROPEAMUSSIIDAE		
Pl. 6, fig. 3	Propeamussiidae sp. 1	K.L. Kaiser Collection (single right valve).
---	Propeamussiidae sp. 2	K.L. Kaiser Collection (fragment); not figured herein.
SPONDYLIDAE		
Pl.6, fig. 4	*Spondylus linguaefelis* Sowerby, 1847	Skoglund, 2000 (w/ color image); K.L. Kaiser Collection (wet), (live), largest specimen, an encrusted right valve, 156.0 mm; reported at Isla del Coco, Costa Rica (Bernard et al., 1991); reported at Islas Revillagigedo, Île Clipperton, Islas Galápagos (Skoglund, 2000).
LUCINIDAE		
Pl.6, figs. 5, 5a	Lucinidae sp. 1	K.L. Kaiser Collection.
CONDYLOCARDIIDAE		

Pl.7, figs. 1, 1a, 1b	*Condylocardia digueti* Lamy, 1916	K.L. Kaiser Collection (live), largest specimen 2.0 mm.
Pl.7, figs. 2, 2a, 2b	*Condylocardia* sp. 1	K.L. Kaiser Collection (live), largest specimen 2.3 mm.
Pl.7, figs. 3, 3a, 3b	*Condylocardia* sp. 2	K.L. Kaiser Collection (live), largest specimen 2.0 mm.
CHAMIDAE		
Pl.8, fig. 1	*Pseudochama* cf. *panamensis* (Reeve, 1847)	K.L. Kaiser Collection (single right valve).
LASAEIDAE		
Pl. 8 fig. 2	*Cymatioa electilis* (Berry, 1963)	K.L. Kaiser Collection (wet), (live), largest specimen 19.1 mm; reported at Isla del Coco, Costa Rica (Bernard, et al., 1991).
Pl.8, figs. 3, 3a, 3b	*Kellia suborbicularis* (Montagu, 1803)	K.L. Kaiser Collection, largest specimen 2.2 mm.
VENERIDAE		
Pl.8, figs. 4a,b	*Globivenus isocardia* (Verrill, 1870)	K.L. Kaiser Collection; reported at Isla del Coco, Costa Rica (Bernard et al., 1991).
Pl.8, figs. 5, 5a, 5b	*Timoclea squamosa* (Carpenter, 1857)	K.L. Kaiser Collection, largest specimen 2.2 mm.
NEOLEPTONIDAE		
Pl.9, figs. 1, 1a, 1b, 1c	*Neolepton* (*Stohleria*) *subtrigonum* (Carpenter, 1857)	K.L. Kaiser Collection (live), largest specimen 2.4 mm; reported at Isla del Coco, Costa Rica (Bernard et al., 1991).
SEMELIDAE		
Pl.9, figs. 2, 2a	*Semele jamesi* Coan, 1988	K.L. Kaiser Collection (?live), largest specimen, juvenile, 2.2 mm; reported at Isla del Coco, Costa Rica (Coan, 1988).
PHOLADIDAE		
---	Pholadidae sp. 1	K.L. Kaiser Collection (fragment); not figured herein.
TEREDINIDAE		
Pl.10, figs. 1, 1a, 1b	cf. *Xylophaga* sp. 1	K.L. Kaiser Collection.
Pl.10, figs. 2, 2a	Bivalve sp. 1	K.L. Kaiser Collection.
Pl.10, figs. 3, 3a	Bivalve sp. 2	K.L. Kaiser Collection.
---	Bivalve sp. 3	K.L. Kaiser Collection; not figured herein.
GASTROPODA		
SCISSURELLIDAE		

Pl.11, figs. 1, 1a	*Sinezona rimuloides* (Carpenter, 1865)	K.L. Kaiser Collection (live); occurs at Isla del Coco, Costa Rica (live).
Pl.11, figs. 2, 2a, 2b	*Sinezona* sp. 1	K.L. Kaiser Collection, single specimen, 0.55 mm.
Pl.12, figs. 1, 1a	Scissurellidae sp. 1	K.L. Kaiser Collection.
Pl.12, figs. 2, 2a	Scissurellidae sp. 2	K.L. Kaiser Collection.
FISSURELLIDAE		
Pl.12, fig. 3	*Diodora inaequalis* (Sowerby, 1835)	K.L. Kaiser Collection (live), single specimen 21.7 mm; occurs at Isla del Coco, Costa Rica (live).
Pl.12, fig. 4	*Diodora punctifissa* McLean, 1970	K.L. Kaiser Collection (wet), (live), largest specimen, 12.5 mm; occurs at Isla del Coco, Costa Rica (live).
Pl.12, fig. 5	*Diodora saturnalis* (Carpenter, 1864)	Birkeland et al., 1975, USNM (wet), (live); K.L. Kaiser Collection (wet), (live), largest specimen 10.7 mm; occurs at Isla del Coco, Costa Rica (live).
SKENEIDAE		
Pl.13, fig. 1	*Parviturbo acuticostatus* (Carpenter, 1864)	K.L. Kaiser Collection.
Pl.13, figs. 2, 2a	*Pachystremiscus solitarius* (Hertlein & Allison, 1968)	K.L. Kaiser Collection (live); previously found in the tropical eastern Pacific only at Île Clipperton (French possession) (Hertlein & Allison, 1968); occurs at Isla del Coco, Costa Rica.
Pl.13, figs. 3, 3a, 3b	*Pachystremiscus* sp. 1	K.L. Kaiser Collection (live), single specimen 0.7 mm.
Pl.14, fig. 1	*Pachystremiscus* sp. 2	K.L. Kaiser Collection.
Pl.14, fig. 2	*Pachystremiscus* sp. 3	K.L. Kaiser Collection, largest specimen 1.25 mm.
Pl.14, fig. 3	*Pachystremiscus* sp. 4	K.L. Kaiser Collection (live), largest specimen 0.8 mm.
Pl.14, fig. 4	?*Pachystremiscus* sp. 5	K.L. Kaiser Collection.
Pl.14, fig. 5	?*Pachystremiscus* sp. 6	K.L. Kaiser Collection.
Pl.14, fig. 6	?*Pachystremiscus* sp. 7	K.L. Kaiser Collection.
Pl.14, fig. 7	?*Pachystremiscus* sp. 8	K.L. Kaiser Collection, single specimen.
PELYCIDIIDAE		
Pl.14, fig. 8	*Pelycidion kelseyi* (Bartsch, 1911)	K.L. Kaiser Collection; reported at Isla del Coco, Costa Rica (Shasky, 1996a).
TURBINIDAE		
Pl.15, figs. 1, 1a	*Homalopoma* sp. 1	K.L. Kaiser Collection.
Pl.15, fig. 2	*Eulithidium diantha* (McLean, 1970)	K.L. Kaiser Collection (live), largest specimen 2.2 mm; reported at Isla del Coco, Costa Rica (Shasky, 1989c).
NERITIDAE		

Pl.15, fig. 3	*Nerita* (*Cymostyla*) *scabricosta* Lamarck, 1822	K.L. Kaiser Collection; reported at Isla del Coco, Costa Rica (Biolley, 1907).
PHENACOLEPADIDAE		
Pl.15, fig. 4	cf. *Plesiothyreus osculans* (C.B. Adams, 1852)	K.L. Kaiser Collection (fragment); occurs at Isla del Coco, Costa Rica.
LITTORINIDAE		
Pl.15, fig. 5	*Littoraria* (*Protolittoraria*) *pintado pullata* (Carpenter, 1864)	K.L. Kaiser Collection (live), single specimen; reported at Islas Revillagigedo, Île Clipperton and Isla del Coco (Reid,1999; Reid & Kaiser, 2001).
Pl.15, fig. 6	*Nodilittorina* (?*Fossarilittorina*) *modesta* (Philippi, 1846)	as: *Littorina conspersa* in Dall (1908); LACM 33-7.4; K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Biolley, 1907).
RISSOIDAE		
Pl.16, fig. 1	*Alvania* (*Alvania*) cf. *inconspicua* (C.B. Adams, 1852)	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica.
Pl.16, fig. 2	*Alvania* sp. 1	K.L. Kaiser Collection (live); same taxon occurs at Isla del Coco, Costa Rica.
Pl.16, fig. 3	*Alvania* sp. 2	K.L. Kaiser Collection (live).
Pl.16, figs. 4, 4a	cf. *Onoba* sp. 1	K.L. Kaiser Collection.
Pl.16, fig. 5	cf. *Onoba* sp. 2	K.L. Kaiser Collection, single specimen.
Pl.17, fig. 1	*Rissoina* (*Rissoina*) cf. *clandestina* (C.B. Adams, 1852)	K.L. Kaiser Collection, worn shells.
Pl.17, fig. 2	*Rissoina* (*Rissoina*) cf. *effusa* Mörch, 1860	K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Shasky, 1996a).
Pl.17, fig. 3	*Rissoina* (*Rissoina*) *stricta* Menke, 1850	K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Shasky, 1996a).
Pl.17, fig. 4	cf. *Rissoina* sp. 1	K.L. Kaiser Collection.
Pl.17, fig. 5	cf. *Rissoina* sp. 2	K.L. Kaiser Collection.
Pl.17, fig. 6	cf. *Rissoina* sp. 3	K.L. Kaiser Collection.
Pl.17, fig. 7	*Folinia ericana* (Hertlein & Strong, 1951)	K.L. Kaiser Collection (fragment); occurs at Isla del Coco, Costa Rica (live).
BARLEEIDAE		
Pl.18, fig. 1	*Barleeia* cf. *bifasciata* (Carpenter, 1857)	K.L. Kaiser Collection, single specimen; occurs at Isla del Coco, Costa Rica (live).
Pl.18, fig. 2	*Barleeia* sp. 1	K.L. Kaiser Collection (live).
Pl.18, fig. 3	*Barleeia* sp. 2	K.L. Kaiser Collection.
Pl.18, fig. 4	*Lirobarleeia* sp. 1	K.L. Kaiser Collection (live).
Pl.18, fig. 5	*Lirobarleeia* sp. 2	K.L. Kaiser Collection.
Pl.18, fig. 6	? *Lirobarleeia* sp. 3	K.L. Kaiser Collection, worn protoconch.
ELACHISINIDAE		

Pl.19, fig. 1	*Elachisina* sp. 1	K.L. Kaiser Collection (live); same taxon occurs at Isla del Coco, Costa Rica.
VITRINELLIDAE		
Pl.19, fig. 2	? *Solariorbis* sp. 1	K.L. Kaiser Collection; same taxon occurs at Isla del Coco, Costa Rica.
Pl.19, fig. 3	Vitrinellidae sp. 1	K.L. Kaiser Collection.
CAECIDAE		
Pl.19, figs. 4, 4a	*Caecum* (*Micranellum*) cf. *corrugulatum* Carpenter, 1857	K.L. Kaiser Collection (live); occurs at Isla del Coco, Costa Rica.
Pl.19, fig. 5	*Caecum* (*Micranellum*) sp. 1	K.L. Kaiser Collection.
Pl.19, fig. 6	*Elephantulum* sp. 1	K.L. Kaiser Collection (fragment), single specimen.
Pl.19, fig. 7	*Fartulum* (*Fartulum*) cf. *glabriforme* (Carpenter, 1857)	K.L. Kaiser Collection (live); occurs at Isla del Coco, Costa Rica (live).
Pl.20, figs. 1, 1a	*Fartulum* sp. 1	K.L. Kaiser Collection.
Pl.20, fig. 2	*Fartulum* sp. 2	K.L. Kaiser Collection; same taxon occurs at Isla del Coco, Costa Rica.
Pl.20, fig. 3	*Fartulum* sp. 3	K.L. Kaiser Collection (fragment).
TURRITELLIDAE		
Pl.20, fig. 4	*Vermicularia* cf. *frisbeyae* McLean, 1970	K.L. Kaiser Collection (live); occurs at Isla del Coco, Costa Rica.
Pl.20, fig. 5	*Vermicularia* cf. *pellucida eburnea* (Reeve, 1842)	K.L. Kaiser Collection (wet), (live); occurs at Isla del Coco, Costa Rica.
MODULIDAE		
Pl.20, fig. 6	*Modulus* cf. *cerodes* (A. Adams, 1851)	K.L. Kaiser Collection, juvenile; occurs at Isla del Coco, Costa Rica.
VERMETIDAE		
Pl.21, fig. 1	*Dendropoma* sp. 1	K.L. Kaiser Collection (?live).
Color Pl. 1, fig. 3	*Serpulorbis margaritaceus* (Chenu, 1844, ex Rousseau MS)	collected by Birkeland et al. in 1972, not listed in Birkeland et al. (1975); USNM (live); K.L. Kaiser Collection (live).
Pl.21, fig. 2	Vermetidae sp. 1	K.L. Kaiser Collection (live).
Pl.21, fig. 3	Vermetidae sp. 2	K.L. Kaiser Collection (live).
Pl.21, fig. 4	Vermetidae sp. 3	K.L. Kaiser Collection (live).
PLANAXIDAE		
Pl.21, fig. 5	*Fossarus* cf. *angulatus* Carpenter, 1857	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica.
EPITONIIDAE		
Pl.22, figs. 1, 1a	*Epitonium* (*Asperiscala*) *acapulcanum* Dall, 1917	K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Shasky, 1996b).

Color Pl. 2, fig. 2	*Epitonium* (*Asperiscala*) *billeeanum* (DuShane & Bratcher, 1965)	Birkeland et al., 1975, USNM (live); K.L. Kaiser Collection (wet), (live with egg strands on *Tubastraea* sp.); occurs at Isla del Coco, Costa Rica on same *Tubastraea* sp. (S. Cairns, pers. comm., 2000).
Pl.22, figs. 2, 2a	*Epitonium* sp. 1	K.L. Kaiser Collection, (juvenile); same species appears to occur at Île Clipperton (juvenile).
Pl.22, figs. 3, 3a	*Epitonium* sp. 2	K.L. Kaiser Collection (live).
Pl.22, figs. 4, 4a	*Opalia paulula* DuShane, 1974	K.L. Kaiser Collection (live); occurs at Isla del Coco, Costa Rica.
JANTHINIDAE		
---	*Janthina pallida* Harvey, 1817	Dall, 1908 (U.S.S. *Albatross* station 3381, circumtropical); not figured herein.
Pl.23, fig. 1	*Janthina* cf. *prolongata* Blainville, 1822	K.L. Kaiser Collection (wet), live on bubble raft w/ egg capsules in various stages of development from early embryos to veligers), floating at surface (04°51.884N, 81°54.790W).
EULIMIDAE		
Pl.23, fig. 2	*Melanella* sp. 1	K.L. Kaiser Collection (wet, w/ host holothurian sp.), (live).
Pl.23, fig. 3	*Melanella* sp. 2	K.L. Kaiser Collection (live).
Pl.23, fig. 4	*Melanella* sp. 3	K.L. Kaiser Collection (wet), (live).
Pl.24, fig. 1	*Melanella* sp. 4	K.L. Kaiser Collection (live).
Pl.23, fig. 5	*Hemiliostraca* sp. 1	K.L. Kaiser Collection (wet), (live).
Pl.23, fig. 6	*Hemiliostraca* sp. 2	K.L. Kaiser Collection (wet), (live).
Pl.24, fig. 2	*Sabinella* cf. *shaskyi* Warén, 1992	K.L. Kaiser Collection (wet), live on host urchin *Eucidaris thourarsi* with spine gall; reported at Isla del Coco, Costa Rica (Warén, 1992).
Pl.24, fig. 3	*Sabinella* sp. 1	K.L. Kaiser Collection.
Pl.24, figs. 4, 4a	Eulimidae sp. 1	K.L. Kaiser Collection (live); very similar species occurs at Île Clipperton.
Pl.24, figs. 5, 5a	Eulimidae sp. 2	K.L. Kaiser Collection (live).
Pl.25, fig. 1	Eulimidae sp. 3	K.L. Kaiser Collection (live).
Pl.25, fig. 2	Eulimidae sp. 4	K.L. Kaiser Collection, single specimen.
Pl.25, fig. 3	Eulimidae sp. 5	K.L. Kaiser Collection.
HIPPONICIDAE		
Pl.25, fig. 4	*Hipponix antiquatus panamensis* C.B. Adams, 1852	as *H. panamensis* C.B. Adams, 1852 in Birkeland et al. (1975), USNM (live); K.L. Kaiser Collection (live); occurs at Isla del Coco, Costa Rica (live).
Pl.25, fig. 5	*Hipponix grayanus* Menke, 1853	Birkeland et al., 1975, USNM (live); K.L. Kaiser Collection (live); recorded at Isla del Coco, Costa Rica (Biolley, 1907).
Pl.26, fig. 1	*Pilosabia* cf. *planatus* Carpenter, 1857	K.L. Kaiser Collection (live).

Pl.26, figs. 2, 2a	? Hipponicidae sp. 1	K.L. Kaiser Collection (live), largest specimen 11.4 mm W, 6.3 mm H, has horseshoe shaped interior scar.
Pl.26, figs. 3, 3a	? Hipponicidae sp. 2	K.L. Kaiser Collection, single specimen.
Pl.26, figs. 4, 4a	? Hipponicidae sp. 3	K.L. Kaiser Collection, single specimen.
VANIKORIDAE		
Pl.27, fig. 1	*Vanikoro aperta* (Carpenter, 1864)	K.L. Kaiser Collection, (juvenile); occurs at Isla del Coco, Costa Rica.
Pl.27, fig. 2	*Vanikoro galapagana* Hertlein & Strong, 1959	K.L. Kaiser Collection.
CALYPTRAEIDAE		
Pl.27, fig. 3	*Cheilea cepacea* (Broderip, 1834)	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica.
Pl.27, fig. 4	*Cheilea corrugata* (Broderip, 1834)	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica (live).
Pl.27, fig. 5	*Crepidula aculeata* (Gmelin, 1791)	Birkeland et al., 1975, USNM (live); K.L. Kaiser Collection.
Pl.27, fig. 6	*Crepidula* sp. 1	K.L. Kaiser Collection.
CAPULIDAE		
---	*Capulus* sp. 1	Birkeland et al., 1975, specimen(s) not seen nor genus collected by authors, unable to confirm, delete Malpelo record herein.
ATLANTIDAE		
---	*Atlanta gaudichaudi* Souleyet, 1852	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica; not figured herein.
---	*Atlanta inflata* Souleyet, 1852	K.L. Kaiser Collection; not figured herein.
---	*Atlanta peroni* Lesueur, 1817	K.L. Kaiser Collection; not figured herein.
---	*Atlanta plana* Richter, 1972	K.L. Kaiser Collection; not figured herein.
---	*Atlanta tokiokai* van der Spoel & Troost, 1972	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica; not figured herein.
---	*Atlanta turriculata* d'Orbigny, 1836	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica; not figured herein.
---	*Oxygyrus keraudrenii* (Lesueur, 1817)	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica; not figured herein.
CARINARIIDAE		
Pl.28, fig. 1	cf. *Carinaria japonica* Okutani,1955	K.L. Kaiser Collection, larval shells.
NATICIDAE		
Pl.28, fig. 2	Naticidae sp. 1	K.L. Kaiser Collection (fragment).
Pl.28, fig. 3	cf. Naticidae sp. 2	K.L. Kaiser Collection (live).
Pl.28, fig. 4	cf. Naticidae sp. 3	K.L. Kaiser Collection.
Pl.28, fig. 5	cf. Naticidae sp. 4	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica.

TRIVIIDAE		
---	*Hespererato ?columbella* (Menke, 1843)	as *Erato* (*?columbella* Menke) in Birkeland et al. (1975), worn specimen misidentified, is comparable to *Persicula* sp. 1, delete Malpelo record herein.
Pl.28, fig. 6	*Hespererato scabriuscula* (Sowerby, 1832)	K.L. Kaiser Collection (wet), (live).
CYPRAEIDAE		
Pl.29, fig. 1	*Blasicrura alisonae* (Burgess, 1983)	K.L. Kaiser Collection (wet), (live), largest specimen 38.4 mm; reported at Isla del Coco, Costa Rica (Shasky, 1983a).
---	*Blasicrura teres* (Gmelin, 1791)	as *Cypraea teres pellucens* Melvill in Birkeland et al. (1975), specimen(s) not seen by authors, unable to confirm record; synonymized by Burgess (1985); as *Cypraea* in von Prahl (1990), specimen(s) not seen by authors, unable to confirm record; reported on Pacific coast of Colombia (Cantera-K., 1991); not figured herein.
Color Pl. 1, fig. 4	*Erosaria* (*Erosaria*) *albuginosa* (Gray, 1825)	as *Cypraea* in Birkeland et al. (1975), USNM (dead); von Prahl (1990); K.L. Kaiser Collection (wet), (live on egg mass), largest specimen 30.4 mm; reported at Isla del Coco, Costa Rica (Beals, 1995).
Pl.29, fig. 2	*Luria isabellamexicana* (Stearns, 1893)	as *Cypraea* (Birkeland et al., 1975; von Prahl,1990), specimen(s) not seen by authors; K.L. Kaiser Collection (wet), (live), largest specimen 40.7 mm; reported at Isla del Coco, Costa Rica (Biolley, 1907).
Pl.29, fig. 3	*Macrocypraea cervinetta* (Kiener, 1843)	as *Cypraea* in von Prahl (1990); K.L. Kaiser Collection, largest specimen 92.5 mm; reported at Isla del Coco, Costa Rica (Groves, 1992).
Pl.29, fig. 4	*Mauritia arabicula* (Lamarck, 1811)	as *Cypraea* in von Prahl (1990); K.L. Kaiser Collection (fresh dead), largest specimen 28.2 mm.
Pl.29, fig. 5	*Talparia talpa* (Linnaeus, 1758)	K.L. Kaiser Collection (fresh dead), largest specimen 65.0 mm; reported at Isla del Coco, Costa Rica (Shasky, 1983b; Kaiser, 1998).
---	*Zonaria* (*Zonaria*) *aequinoctialis* Schilder, 1933	as *Z.* (*Z.*) *annettae aequinoctialis* in Cate (1969); [Cate erroneously used the locality number 83, representing Isla Malpelo, under "Localities", the specimens discussed were Cate Coll. nos. C1467, C1468, C1469, restricted to coastal waters from Panama Bay south to Peru], delete Malpelo record herein; reported on Pacific coast of Colombia (Cantera-K., 1991).
---	*Zonaria* (*Pseudozonaria*) *robertsi* (Hidalgo, 1906)	as *Cypraea* in von Prahl (1990), specimen(s) not seen by authors; reported at Isla del Coco, Costa Rica (Groves, 1992); reported as common on Pacific coast of Colombia (Cantera-K.,1991); not figured herein.

OVULIDAE		
Pl.30, fig. 1	*Neosimnia aequalis* (Sowerby, 1832)	as *Simnia* in Birkeland et al. (1975); specimen(s) not seen by authors; K.L. Kaiser Collection (wet), (live); reported at Isla del Coco, Costa Rica (Groves, 1992).
Pl.30, fig. 2	*Simnialena rufa* (Sowerby, 1832)	K.L. Kaiser Collection (wet), (live, all are light pink in color on same color sea fan [Color Plate 5, fig. 6]); occurs at Isla del Coco, Costa Rica (live, all are light pink in color.
---	*Jenneria pustulata* ([Lightfoot, 1786], ex Solander MS)	von Prahl, 1990, specimen(s) not seen by authors; reported on Pacific coast of Colombia (Cantera-K., 1991); fragment of specimen reported at Isla del Coco, Costa Rica (Groves, 1992); not figured herein.
Color Pl. 1, fig. 5	*Pseudocypraea adamsonii* (Sowerby, 1832)	K.L. Kaiser Collection (wet), (live, pair); reported at Isla del Coco, Costa Rica (Shasky, 1983b).
TONNIDAE		
Pl.30, fig. 3	*Malea ringens* (Swainson, 1822)	K.L. Kaiser Collection (fragment); shells found at Isla del Coco, Costa Rica.
CASSIDAE		
Color Pl. 1, fig. 6	*Cypraecassis* (*Cypraecassis*) *tenuis* (Wood, 1828)	K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Shasky, 1989c).
RANELLIDAE		
Color Pl. 2, fig. 1	*Cymatium* (*Monoplex*) *macrodon* (Valenciennes, 1832)	as *C. pileare* (Linnaeus) in Birkeland et al. (1975), specimen(s) not seen by authors; K.L. Kaiser Collection (live), largest specimen 73.4 mm; *C. macrodon* as a subspecies of *C. pileare* per Emerson (1991); reported at Isla del Coco, Costa Rica (Montoya, 1983).
BURSIDAE		
Pl.30, fig. 4	*Bursa* (*Colubrellina*) *corrugata corrugata* (Perry, 1811)	K.L. Kaiser Collection (wet), (live), largest specimen 47.1 mm); reported at Isla del Coco, Costa Rica (Montoya, 1983).
Pl.30, fig. 5	*Bursa* (*Colubrellina*) *granularis* (Röding, 1798)	K.L. Kaiser Collection (live), largest specimen 52.8 mm); reported at Islas Revillagigedo (Emerson, 1991); Île Clipperton (Small, 1994); Isla del Coco, Costa Rica (Shasky, 1983b)
CERITHIOPSIDAE		
Pl. 31, figs. 1, 1a	*Cerithiopsis* sp. 1	K.L. Kaiser Collection (live).
Pl.31, figs. 2, 2a,b	*Cerithiopsis* sp. 2	K.L. Kaiser Collection (live).
Pl.31, figs. 3, 3a	*Cerithiopsis* sp. 3	K.L. Kaiser Collection.
Pl.31, figs. 4, 4a	*Cerithiopsis* sp. 4	K.L. Kaiser Collection.
Pl.31, figs. 5, 5a	*Cerithiopsis* sp. 5	K.L. Kaiser Collection.

Pl.32, figs. 1, 1a	*Cerithiopsis* sp. 6	K.L. Kaiser Collection.
Pl.32, figs. 2, 2a	*Cerithiopsis* sp. 7	K.L. Kaiser Collection.
Pl.32, figs. 3, 3a	*Cerithiopsis* sp. 8	K.L. Kaiser Collection.
Pl.32, figs. 4, 4a	*Seila assimilata* (C.B. Adams, 1852)	as *Seila assimilata* in Birkeland et al. (1975), single specimen is *S. pulmoensis* Dushane & Draper, 1975, K.L. Kaiser Collection (live); occurs at Isla del Coco, Costa Rica (live).
Pl.32, fig. 5	*Seila kanoni* (de Folin, 1867)	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica.
Pl.32, fig. 6	*Seila pulmoensis* DuShane & Draper, 1975	USNM, (dead); in Birkeland et al. (1975) as *S. assimilata*; K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica (live).
TRIPHORIDAE		
Pl.33, figs. 1, 1a	*Triphora dalli* Bartsch, 1907	K.L. Kaiser Collection (live), largest specimen 8.2 mm; occurs at Isla del Coco, Costa Rica (live).
Pl.33, figs. 2, 2a	*Triphora* sp.1	K.L. Kaiser Collection.
Pl.33, figs. 3, 3a	*Triphora* sp.2	K.L. Kaiser Collection.
Pl.33, figs. 4, 4a	*Triphora* sp.3	K.L. Kaiser Collection.
Pl.34, figs. 1, 1a	*Triphora* sp.4	K.L. Kaiser Collection.
Pl.34, figs. 2, 2a	*Triphora* sp.5	K.L. Kaiser Collection.
Pl.34, figs. 3, 3a	*Triphora* sp.6	K.L. Kaiser Collection.
Pl.34, figs. 4, 4a	*Metaxia convexa* (Carpenter, 1857)	K.L. Kaiser Collection (live); occurs at Isla del Coco, Costa Rica (live).
MURICIDAE		
Pl.35, fig.1	*Hexaplex (Muricanthus) princeps* (Broderip, 1833)	as *Muricanthus* in Birkeland et al. (1975), specimen(s) not seen by authors; K.L. Kaiser Collection (live); occurs at Isla del Coco, Costa Rica (in 3-30 m), Isla Roca Partida, Islas Revillagigedo, México, and Île Clipperton (Kaiser, 2001).
Pl.35, fig. 2	*Chicoreus (Phyllonotus) eversoni* D'Attilio, Myers & Shasky, 1987	K.L. Kaiser Collection (live, 15 m, in the clutches of *Octopus hubbsorum* Berry, 1953); previously found only at Isla del Coco, Costa Rica in 90 m (D'Attilio et al., 1987), SBMNH 345477; color image (Kaiser, 2001).
Pl.35, fig. 3	*Aspella hastula* (Reeve, 1844)	K.L. Kaiser Collection (wet), (live); reported at Isla del Coco, Costa Rica (Shasky, 1989c; Kaiser, 2001).
Pl.35, fig. 4	*Aspella pyramidalis* (Broderip, 1833)	K.L. Kaiser Collection (?live).

Pl.35, fig. 5 Color Pl. 2, fig. 4	*Muricopsis* (*Muricopsis*) *westonensis* Myers & D'Attilio, 1990	as *Morula lugubris* in Birkeland et al. (1975); USNM (live); K.L. Kaiser Collection (wet), (live); previously found only at Isla del Coco, Costa Rica (Myers & D'Attilio, 1990), SBMNH 345475; color image (Kaiser, 2001).
Pl.36, fig. 1	*Favartia* (*Favartia*) *cocosensis* Myers & D'Attilio, 1990	K.L. Kaiser Collection (wet): (live); previously found only at Isla del Coco, Costa Rica, in Myers & D'Attilio (1990), SBMNH 345474; color image (Kaiser, 2001).
Pl.36, fig. 2	*Favartia* (*Favartia*) *incisa* (Broderip, 1833)	K.L. Kaiser Collection (worn shell); reported at Isla del Coco, Costa Rica, 60-90 m (Kaiser, 2001).
Pl.36, fig. 3	*Bizetiella micaela* Radwin & D'Attilio, 1972	K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Shasky, 1989c; Kaiser, 2001).
Pl.36, fig. 4	*Pterotyphis* (*Tripterotyphis*) *lowei lowei* (Pilsbry, 1931)	K.L. Kaiser Collection (wet), (live); reported at Isla del Coco, Costa Rica (Shasky, 1989c; Kaiser, 2001).
Pl.36, figs. 5, 5a	*Pascula rufonotata* (Carpenter, 1864)	K.L. Kaiser Collection (live); collected by Birkeland et al. in 1972; listed as *Morula lugubris* in Birkeland et al. (1975), USNM (live); reported at Isla del Coco, Costa Rica (intertidal to 60 m), Islas Clarión and Roca Partida, Islas Revillagigedo, México, and Île Clipperton (Kaiser, 2001).
Pl.36, fig. 6	*Pascula* sp.1	K.L. Kaiser Collection (live).
---	*Trachypollia lugubris* (C.B. Adams, 1852)	as *Morula* in Birkeland et al. (1975), reported by Kaiser (2001) [citing Birkeland et al. (1975)], specimens misidentified, are actually *Muricopsis westonensis* Myers & D'Attilio, 1990; delete Malpelo record herein.
Pl.37, fig. 1	*Vitularia salebrosa* (King & Broderip, 1832)	K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (in 20-90 m), Isla Roca Partida, Islas Revillagigedo, México (Kaiser, 2001).
Pl.37, fig. 2	*Mancinella speciosa* (Valenciennes, 1832)	K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Montoya, 1983), Île Clipperton (Hertlein & Allison, 1960; Kaiser, 2001).
Pl.37, fig. 3	*Mancinella triangularis* (Blainville, 1832)	K.L. Kaiser Collection; reported at Isla del Coco, Costa Rica (Montoya, 1983; Kaiser, 2001).
Pl.37, fig. 4	*Plicopurpura pansa* (Gould, 1853)	as *Thais patula* Linnaeus in Hertlein (1932); as *Purpura* in Birkeland et al. (1975); USNM (live); CAS, Dept. of Paleontology, Loc. 27203 (live); LACM 1933-7.3; K.L. Kaiser Collection (live), largest specimen 53.3 mm; reported at Isla del Coco, Costa Rica (Biolley, 1907), Île Clipperton (Hertlein & Allison, 1960; Kaiser, 2001).
Pl.37, fig. 5	*Acanthais biserialis* (Blainville, 1832)	K.L. Kaiser Collection (live), largest specimen 60.8 mm; as *Thais* reported at Isla del Coco, Costa Rica (Montoya, 1983), Île Clipperton (Hertlein & Allison, 1960); as *Stramonita* (Kaiser, 2001).

Pl.37, fig. 6	*Acanthais brevidentata* (Wood, 1828)	as *Acanthina* in (Hertlein, 1932; Birkeland et al., 1975), USNM (live); genus changed to *Acanthais* (Vermeij & Kool, 1994; Vermeij & Carlson, 2000); CAS, Dept. of Paleo., Loc. 27203 (1 specimen); LACM 33-7.1 (wet), (live); K.L. Kaiser Collection (fragment); reported at Isla del Coco, Costa Rica (Biolley, 1907); as *Stramonita* (Kaiser, 2001).
Pl.38, fig. 1	*Neorapana muricata* (Broderip, 1832)	K.L. Kaiser Collection (live), Kaiser, 2001; as *Thais,* single dead specimen reported at Isla del Coco, Costa Rica, (Chaney, 1992; Kaiser, 2001).
Pl.38, fig. 2	*Tribulus planospira* (Lamarck, 1822)	all records as *Thais*: Birkeland et al. (1975), USNM (live); LACM 33-7.2, (live); K.L. Kaiser Collection (live), largest specimen 67.1 mm; reported at Isla del Coco, Costa Rica (Everson, 1984), Île Clipperton (M. Smith, 1939; Kaiser, 2001).
CORALLIOPHILIDAE		
Pl.38, fig. 3	*Coralliophila* (*Coralliophila*) *macleani* Shasky, 1970	USNM (wet, w/ egg sack in aperture) (live); K.L. Kaiser Collection (wet) (live, associated with the stems of alcyonarians [seafans]) 30-60 m, largest specimen 15.7 mm; reported at Isla del Coco, Costa Rica (Kaiser, 2001).
Pl.38, fig. 4	*Coralliophila* (*Coralliophila*) *neritoides* (Lamarck, 1816)	as *Coralliophila* (*?neritoides* [Lamarck]) in Birkeland et al. (1975); K.L. Kaiser Collection, eleven live collected, associated with hard corals, 1 dead, in 1998, largest specimen 30.8 mm with egg capsules in aperture; in 2000 a single dead specimen collected; reported at Islas Revillagigedo (Strong & Hanna, 1930); as *C. violacea* (Kiener, 1836) reported at Isla del Coco, Costa Rica, Île Clipperton (Hertlein & Allison, 1960; Kaiser, 2001).
Pl.38, fig. 5	*Coralliophila* (*Coralliophila*) *rocasuciae* Myers & D'Attilio, 1990	K.L. Kaiser Collection (wet), (live, on under sides of rocks, associated with an ahermatypic coral of the same color), record size (11.65 mm) female with egg capsule in aperture; previously found only at Isla del Coco, Costa Rica, per Myers & D'Attilio (1990), SBMNH 345476, 18-36 m; color image (Kaiser, 2001).
---	*Coralliophila* (*Pseudomurex*) *nux* (Reeve, 1864)	Kaiser (2001), specimens of *Coralliophila nux* erroneously identified, are confirmed as *Coralliophila parva*, delete Malpelo record herein.
---	*Coralliophila* sp.	Birkeland et al., 1975; specimen(s) not seen by authors, unable to confirm record, delete Malpelo record herein.
Pl.38, fig. 6	*Coralliophila (Pseudomurex) parva* (E.A. Smith, 1877)	K.L. Kaiser Collection (wet), (live, associated with the stems of alcyonarians [seafans]); LACM 33-7.5; reported at Isla del Coco, Costa Rica and Île Clipperton (Kaiser, 2001).

---	*Babelomurex* cf. *costata* (Blainville, 1832)	as *Coralliophila* in von Prahl (1990), specimen(s) not seen by authors; reported at Malpelo (Kaiser, 2001); Malpelo record is suspect, not figured herein.
---	*Babelomurex* cf. *hindsii* (Carpenter, 1857)	reported at Malpelo (Kaiser, 2001); reported at Isla del Coco, Costa Rica (Kaiser, 2001); Malpelo record is suspect, not figured herein.
Pl.38, fig. 8	*Quoyula madreporarum* (Sowerby, 1834)	Birkeland et al., 1975, USNM (live); as *monodonta* in von Prahl (1990); K.L. Kaiser Collection (live, associated with hard corals), largest specimen 23.0 mm; reported at Île Clipperton (Hertlein & Emerson, 1957); reported at Isla del Coco, Costa Rica (Kaiser, 2001); live at Isla del Coco.
---	*Reliquiaecava robillardi* (Liénard, 1870)	as *Coralliobia cumingii* in von Prahl (1990), specimen(s) not seen by authors, record is suspect (Kaiser, 2001); reported at Isla del Coco, Costa Rica (Shasky, 1989c); Île Clipperton (Bartsch & Rehder, 1939); not figured herein.
Color pl. 2, fig. 5; Pl. 38, fig. 7	Coralliophilidae sp. 1	K.L. Kaiser Collection (wet), (live); same taxon occurs at Isla del Coco, Costa Rica (live).
BUCCINIDAE		
Pl.39, fig. 1	*Caducifer biliratus* (Reeve, 1846)	K.L. Kaiser Collection (wet), (live); single sub-adult specimen.
Pl.39, fig. 2	*Caducifer cinis* (Reeve, 1846)	K.L. Kaiser Collection (wet), (live); reported at Isla del Coco, Costa Rica (Biolley, 1907).
Pl.39, fig. 3	*Cantharus* (*Pollia*) *sanguinolentus* (Duclos, 1833)	K.L. Kaiser Collection (wet), (live); reported at Isla del Coco, Costa Rica (Biolley, 1907).
Color Pl. 3, fig. 1; Pl 39, fig. 4	*Cantharus* sp. 1	collected by Birkeland et al. in 1972, not listed in Birkeland et al. (1975), USNM (live); K.L. Kaiser Collection (wet), (live), undescribed; same taxon occurs at Isla del Coco, Costa Rica (live).
Color Pl. 2, fig. 6	*Colubraria* (*Colubraria*) *ochsneri* Hertlein & Allison,1968	Birkeland et al. (1975), specimen(s) not seen by authors; Hertz & Kaiser, 1998a (citing Birkeland et al., 1975); Hickman & Finet, 1999; *C. lucasensis* erroneously reported from Isla Malpelo, Colombia, by Hertz & Kaiser (1998a,b), the locality should have read Isla Gorgona, Colombia; K.L. Kaiser Collection (wet), (live, on egg mass); reported at Isla del Coco, Costa Rica (Hertz & Kaiser, 1998a), specimen from Isla del Coco measures 38.9 mm (size record).
Pl.39, fig. 5	*Engina pyrostoma* (Sowerby, 1832)	K.L. Kaiser Collection (live), sub-adult.
Pl.39, fig. 6	*Engina* cf. *solida* Dall, 1917	K.L. Kaiser Collection (live), sub-adult.
Color Pl. 3, fig. 2; Pl. 39, fig. 7	*Engina tabogaensis* Bartsch, 1931	K.L. Kaiser Collection (wet), (live).
COLUMBELLIDAE		

Pl.40, fig. 1	*Anachis* sp. 1	K.L. Kaiser Collection (live); same taxon occurs at Isla del Coco, Costa Rica.
Pl.40, fig. 2	*Anachis* sp. 2	K.L. Kaiser Collection (wet), (live).
—	*Costoanachis ?coronata* (Sowerby, 1832)	as *Anachis* (*?coronata* [Sowerby]) in Birkeland et al. (1975), specimen(s) not seen by authors, unable to confirm record, delete Malpelo record herein.
Pl.40, fig. 3	*Parvanachis dalli* (Bartsch, 1931)	K.L. Kaiser Collection (live), single specimen.
Color Pl. 3, fig. 3; Pl. 40, fig. 4	*Zafrona incerta* (Stearns, 1892)	K.L. Kaiser Collection (wet), (live), USNM, as *Mitrella* sp.1 and 2; occurs at Isla del Coco, Costa Rica (live).
---	*Mitrella* sp. 1	Birkeland et al., 1975, USNM specimen identified as *Zafrona incerta*, delete Malpelo record herein.
---	*Mitrella* sp.2	Birkeland et al., 1975, USNM specimen identified as *Zafrona incerta*, delete Malpelo record herein.
Pl.40, fig. 5	*Steironepion melanostica* (Pilsbry & Lowe, 1932)	K.L. Kaiser Collection (live); recorded at Isla del Coco, Costa Rica (Shasky, 1996a).
Pl.40, fig. 6	*Zanassarina* sp. 1	K.L. Kaiser Collection; same taxon occurs at Isla del Coco, Costa Rica.
NASSARIIDAE		
Pl.40, fig. 7	*Nassarius shaskyi* McLean, 1970	K.L. Kaiser Collection: (live), single sub-adult specimen 17.4 mm.
FASCIOLARIIDAE		
Pl.41, fig. 1	*Pleuroploca princeps* (Sowerby, 1825)	as *Fasciolaria* in Birkeland et al. (1975), specimen(s) not seen by authors; *Pleuroploca* raised from subgenus in Abbott (1974); K.L. Kaiser Collection (live); occurs at Isla del Coco, Costa Rica.
Pl.41, fig. 2	*Leucozonia tuberculata* (Broderip, 1833)	collected by Birkeland et al. in 1972, not listed in Birkeland et al. (1975), USNM (live); K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Montoya, 1983).
Pl.41, fig. 3	*Opeatostoma pseudodon* (Burrow, 1815)	K.L. Kaiser Collection (live).
Pl.41, fig. 4	*Fusinus* (*Fusinus*) *turris* (Valenciennes, 1832)	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica.
Pl.41, fig. 5	?Fasciolariidae sp. 1	K.L. Kaiser Collection, juvenile.
OLIVELLIDAE		
Pl. 41, figs. 6, 7, 7a,7b	*Olivella* (*Minioliva*) sp. 1	K.L. Kaiser Collection (live); largest specimen 5.1 mm.
CYSTISCIDAE		
Pl.42, fig. 1	*Cystiscus* sp. 1	K.L. Kaiser Collection (live).
Pl.42, fig. 2	*Gibberula* sp. 1	K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Shasky, 1997).
Pl.42, fig. 3	*Gibberula* sp. 2	K.L. Kaiser Collection (live).
Pl.42, fig. 4	*Gibberula* sp. 3	K.L. Kaiser Collection (live).
Pl.42, fig. 5	*Gibberula* sp. 4	K.L. Kaiser Collection (live).

Color Pl. 3, fig. 4	*Persicula pulchella* (Kiener, 1834)	K.L. Kaiser Collection (wet), (live); reported at Isla del Coco, Costa Rica (Shasky, 1983a).
Color Pl. 3, fig. 5; Pl. 42, fig. 6	*Persicula* sp. 1	as *Hespererato* ? *columbella* (Menke, 1843) in Birkeland et al. (1975), USNM (dead,worn); K.L. Kaiser Collection (live), largest specimen 7.9 mm.
Pl.42, fig. 7	*Persicula* sp. 2	K.L. Kaiser Collection (live), largest specimen 4.7 mm.
Pl.42, fig. 8	*Persicula* sp. 3	K.L. Kaiser Collection (live).
Pl.42, fig. 9	*Granulina* sp. 1	K.L. Kaiser Collection (live).
MITRIDAE		
Pl.43, fig. 1	*Mitra* (*Nebularia*) *crenata* Broderip, 1836	K.L. Kaiser Collection (wet), (live), largest specimen 11.3 mm; occurs at Isla del Coco, Costa Rica (live).
Pl.43, fig. 2	*Mitra* (*Nebularia*) *effusa* Broderip, 1836	K.L. Kaiser Collection (live), largest specimen 19.1 mm; occurs at Isla del Coco, Costa Rica.
Pl.43, fig. 3	*Mitra* (*Nebularia*) *ferruginea* Lamarck, 1811	K.L. Kaiser Collection, single dead specimen 36.2 mm; reported at Île Cipperton (Cernohorsky, 1976), Isla del Coco, Costa Rica (Shasky, 1984).
Pl.43, fig. 4	*Mitra* (*Strigatella*) *tristis* Broderip, 1836	K.L. Kaiser Collection (?live), single specimen 20.4 mm; reported at Isla del Coco, Costa Rica (Montoya, 1983).
CONIDAE		
Pl.44, fig. 1	*Conus* (*Conus*) *diadema* Sowerby, 1834	Birkeland et al., 1975, USNM, (live); FMNH 291779 (wet), (live); K.L. Kaiser Collection (live), largest specimen 39.5 mm; reported at Isla del Coco, Costa Rica (Montoya, 1983).
Pl.44, fig. 2	*Conus* (*Conus*) *gladiator* Broderip, 1833	K.L. Kaiser Collection, single dead juvenile specimen 10.9 mm; reported at Isla del Coco, Costa Rica (Montoya, 1983).
Pl.44, fig. 3	*Conus* (*Conus*) *tiaratus* Sowerby, 1833, ex Broderip MS	K.L. Kaiser Collection (live), largest specimen 26.6 mm; reported at Isla del Coco, Costa Rica (Montoya, 1983).
Pl.44, fig. 4	*Conus* (*Chelyconus*) *purpurascens* Sowerby, 1833, ex Broderip MS	K.L. Kaiser Collection (live), largest specimen 51.3 mm; reported at Isla del Coco, Costa Rica (Montoya, 1983).
Color Pl. 3, fig. 6	*Conus* (*Cylinder*) *dalli* Stearns, 1873	Birkeland et al., 1975; K.L. Kaiser Collection: (live), largest specimen 60.2 mm; reported at Isla del Coco, Costa Rica (Montoya, 1983).
Pl.44, fig. 5	*Conus* (*Stephanoconus*) *nux* Broderip, 1833	K.L. Kaiser Collection (live), largest specimen 14.4 mm; occurs at Isla del Coco, Costa Rica.
TURRIDAE		
Pl.45, fig. 1	*Mitromorpha carpenteri* Glibert, 1954	K.L. Kaiser Collection (wet), (live), largest specimen 7.5 mm; reported at Isla del Coco, Costa Rica (Shasky, 1996a).

Pl.45, fig. 2	*Clathurella rigida* (Hinds, 1843)	K.L. Kaiser Collection (live), largest specimen 6.7 mm; reported at Isla del Coco, Costa Rica (Shasky, 1996a).
Pl.45, fig. 3	*Microdaphne trichodes* (Dall, 1919)	K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Shasky, 1996a).
Pl.45, fig. 4	Turridae sp. 1	K.L. Kaiser Collection (live), undescribed; same taxon occurs at Isla del Coco, Costa Rica (live).
Pl.45, fig. 5	Turridae sp. 2	K.L. Kaiser Collection.
OMALOGYRIDAE		
Pl.45, figs. 6, 6a	*Omalogyra* sp. 1	K.L. Kaiser Collection (live), largest specimen 0.6 mm; reported at Isla del Coco, Costa Rica, as undescribed (Shasky, 1989b).
ARCHITECTONICIDAE		
Pl.46, fig. 1	*Heliacus* (*Torinista*) cf. *mazatlanicus* Pilsbry & Lowe, 1932	K.L. Kaiser Collection (sub-juvenile); occurs at Isla del Coco, Costa Rica.
AMATHINIDAE		
Pl.46, fig. 2	*Iselica* sp. 1	K.L. Kaiser Collection (live).
PYRAMIDELLIDAE		
Pl.46, fig. 3	*Odostomia* sp. 1	K.L. Kaiser Collection (live).
Pl.46, figs. 4, 4a	*Odostomia* sp. 2	K.L. Kaiser Collection, single specimen.
Pl.46, fig. 5	*Odostomia* sp. 3	K.L. Kaiser Collection.
Pl.46, fig. 6	*Odostomia* sp. 4	K.L. Kaiser Collection (live).
Pl.47, fig. 1	*Herviera gliriella* (Melvill & Standen, 1896)	K.L. Kaiser Collection (live); reported at Isla del Coco, Costa Rica (Shasky, 1987); Islas Galápagos (Shasky, 1989a).
Pl.47, figs. 2, 2a	*Turbonilla* sp. 1	K.L. Kaiser Collection, single shell.
Pl.47, fig. 3	cf. *Graphis* sp. 1	K.L. Kaiser Collection (live).
ORBITESTELLIDAE		
Pl.47, figs. 4, 4a	*Orbitestella* sp. 1	K.L. Kaiser Collection (live); occurs live at Isla del Coco, Costa Rica.
Subclass **OPISTHOBRANCHIA**		
CYLICHNIDAE		
---	Cylichnidae sp. 1	K.L. Kaiser Collection (?live), possible occurrence at Isla del Coco, Costa Rica; not figured herein.
---	Cylichnidae sp. 2	K.L. Kaiser Collection; not figured herein.
AGLAJIDAE		
Color Pl. 5, fig. 1	*Navanax aenigmaticus* (Bergh, 1894)	WAMS 12262.
TYLODINIDAE		
---	*Tylodina fungina* Gabb, 1865	Birkeland et al., 1975, USNM (live), animal without shell; reported at Isla del Coco, Costa Rica (Mulliner, 1993); not figured herein.

PLEUROBRANCHIDAE		
---	*Pleurobranchus areolatus* (Mörch, 1863)	WAMS 12254, 12255; reported at Isla del Coco, Costa Rica (Mulliner, 1993); not figured herein.
Color Pl. 4, fig.6; Pl.48, fig. 2, 2a	*Berthellina engeli* Gardiner, 1936	WAMS 12261, 12263; reported at Isla del Coco, Costa Rica (Mulliner, 1993); reported at Île Clipperton (Debelius, 1996), color image.
CAVOLINIIDAE		
---	*Cavolinia longirostris longirostris* (Blainville, 1821, ex Lesueur MS)	WAMS 12269, 12264; reported at Isla del Coco, Costa Rica (Montoya, 1983); not figured herein.
---	*Cavolinia uncinata* (Rang, 1829)	K.L. Kaiser Collection; reported at Isla del Coco, Costa Rica (Mulliner, 1993); not figured herein.
---	*Diacavolinia elegans* (van der Spoel et al., 1983)	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica; not figured herein.
---	*Diacria quadridentata* (Blainville, 1821, ex Lesueur MS)	K.L. Kaiser Collection; reported at Isla del Coco, Costa Rica (Montoya, 1983); not figured herein.
---	*Diacria* sp. 1	K.L. Kaiser Collection; not figured herein.
---	*Clio* sp. 1	K.L. Kaiser Collection; not figured herein.
---	*Creseis acicula* (Rang, 1828)	WAMS 12270, 12268; reported at Isla del Coco, Costa Rica (Mulliner, 1993); not figured herein.
---	*Creseis virgula* (Rang, 1828)	K.L. Kaiser Collection; reported at Isla del Coco, Costa Rica (Montoya, 1983); not figured herein.
---	*Creseis virgula conica* Eschscholtz,1829	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica; not figured herein.
---	*Creseis virgula constricta* (Chen & Be, 1964)	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica; not figured herein.
LIMACINIDAE		
---	*Limacina* (*Thilea*) *inflata* (d'Orbigny, 1836)	K.L. Kaiser Collection; reported at Isla del Coco, Costa Rica (Montoya, 1983); not figured herein.
Pl. 48, fig. 1, 1a	*Limacina* (*Munthea*) *trochiformis* (d'Orbigny, 1836)	K.L. Kaiser Collection; reported at Isla del Coco, Costa Rica (Mulliner, 1993).
CHROMODORIDIDAE		
Color Pl. 4, Fig. 3	*Chromodoris baumanni* Bertsch, 1970	WAMS 1164; reported at Isla del Coco, Costa Rica as *Chromodoris* sp. A (Debelius, 1998), (color image, *in situ*); WAMS 102-95.
---	*Glossodoris sedna* (Marcus & Marcus, 1967)	as *Chromodoris* in Birkeland et al. (1975), specimen(s) not seen by authors; genus changed (Rudman, 1984; Gosliner, 1991); reported at Île Clipperton (Debelius, 1996), color image; not figured herein.
Color Pl. 4, Fig. 1	*Hypselodoris agassizi* Bergh, 1894	WAMS 12256, 12328.

Color Pl. 4, Fig. 2	*Hypselodoris lapislazuli* (Bertsch & Ferreira, 1974)	WAMS 12267, 12266, 12265, 12259, 12422; known only from Islas Galápagos, Ecuador (Bertsch & Ferreira, 1974), (Debelius, 1996, 1998), color image.
DISCODORIDIDAE		
Color Pl. 4, Fig. 4	*Peltodoris mullineri* Millen & Bertsch, 2000	WAMS 12257.
DENDRODORIDIDAE		
Color Pl. 4, Fig. 5	*Dendrodoris albobrunnea* Allen, 1933	WAMS 12252; reported at Île Clipperton in Debelius (1996), color image.
---	*Dendrodoris krebsii* (Mörch, 1863)	WAMS 12253.
PHYLLIROIDAE		
---	cf. *Phylliroe* sp. 1	WAMS 12258; not figured herein.
TERGIPEDIDAE		
Color Pl. 5, Figs. 2, 3	*Phestilla panamica* Rudman, 1982	WAMS 12260; probably a synonym of *P. lugubris* (Bergh, 1870) in Gosliner (1990).
Subclass **PULMONATA**		
SIPHONARIIDAE		
Pl.48, fig. 3	*Williamia peltoides* (Carpenter, 1864)	K.L. Kaiser Collection; occurs at Isla del Coco, Costa Rica.
TRIMUSCULIDAE		
Pl.48, fig. 4	cf. *Trimusculus stellatus* (Sowerby, 1835)	K.L. Kaiser Collection, juvenile, single specimen.
POLYPLACOPHORA		
ISCHNOCHITONIDAE		
Pl.49, fig. 1	*Chaetopleura* sp. 1	K.L. Kaiser Collection (live), largest specimen >8.0 mm.
Pl.49, fig. 2	*Ischnochiton* sp. 1	K.L. Kaiser Collection (live), largest specimen >3.2 mm.
Pl.49, fig. 3	*Ischnochiton* sp. 2	K.L. Kaiser Collection (live), largest specimen >7.5 mm.
Pl.49, fig. 4	*Ischnochiton* sp. 3	K.L. Kaiser Collection (live), largest specimen >4.7 mm.
Pl.49, fig. 5	*Ischnochiton* sp. 4	K.L. Kaiser Collection (live), single specimen, 3.3 mm.
ACANTHOCHITONIDAE		
---	*Acanthochitona* cf. *imperatrix* Watters, 1981	K.L. Kaiser Collection (valves only), not figured herein.
CEPHALOPODA		
SEPIIDAE		

---	Sepiidae sp. 1	1 squid beak (upper); Isla de Malpelo, "Tiger Mount", 04°00.44'N, 81°36.09'W, *Ostrea* and barnacle shakings, 17-43 m (55-140 ft), leg. K.L. Kaiser, M/V *The Inzan Tiger*, H_2O 61-77°F, 13 March 2000. SBMNH.
OCTOPODIDAE		
Color Pl. 5, Figs. 4, 5	*Octopus* cf. *hubbsorum* Berry, 1953	Kaiser, 2001; SBMNH 345683 (male, 102 mm), SBMNH 345684 (female, 8 mm), SBMNH 345685 (female, 12 mm), SBMNH 345686 (female, 16 mm), all live.
QUESTIONABLE SPECIES		
---	Gastropod sp.1	K.L. Kaiser Collection, SEM #110a, not figured herein.

APPENDIX 2: ANNOTATED CHECKLIST OF DEEP-WATER SPECIES SURROUNDING ISLA DE MALPELO

Appendix 2 lists the deep-water species collected on the U.S.S *Albatross* listed in Dall (1908). The *Albatross* collecting stations, USNM 3354, 3360, 3361, 3374, 3381, were listed with the locality of Panama Bay but are here considered near enough to Isla de Malpelo to be regarded as the deep-water fauna occurring there. None are figured herein. Note: The authors do not consider Isla de Malpelo to be within Panama Bay.

List of Species	Remarks
BIVALVIA	
SOLEMYIDAE	
Acharax johnsoni (Dall, 1891)	as *Solemya* (*Acharax*) *agassizii* Dall, n.sp. in Dall (1908) (U.S.S. *Albatross* stations 3360 and 3381, in 1672-1772 fm, line drawing, USNM 106885).
NUCULIDAE	
Ennucula panamina (Dall, 1908)	as *Nucula* in Dall (1908) (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, USNM 122894).
NUCULANIDAE	
Nuculana (*Jupiteria*) *agapea* (Dall, 1908)	as *Leda* in Dall (1908) (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, USNM 122911).
Nuculana (*Jupiteria*) *pontonia* (Dall, 1890)	as *Leda* in Dall (1908) (U.S.S. *Albatross* station 3360, in 1672 fm).

MALLETIIDAE	
Malletia truncata Dall, 1908	Dall, 1908 (U.S.S. *Albatross* stations 3374, 3361 and 3381, in 1471-1823 fm, line drawing, USNM 122906); Coan et al., 2000.
Malletia (*Neilo*) *goniura* (Dall, 1890)	Dall, 1908 (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, USNM 122908).
Katadesmia vincula (Dall, 1908)	as *Yoldia* (*Katadesmia*) in Dall (1908) (U.S.S. *Albatross* stations 3354, 3360 and 3361, in 322-1672 fm, line drawing, USNM 122903).
NEILONELLIDAE	
Neilonella mexicana (Dall, 1908)	as *Tindaria smirna* Dall, 1908 (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, USNM 122919).
TINDARIIDAE	
Tindaria compressa Dall, 1908	Dall, 1908 (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, USNM 122921).
Tindaria smirna Dall, 1908	Dall, 1908 (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, USNM 122919); may be conspecific with *T. atossa* Dall, 1908 (Knudson, 1970).
YOLDIIDAE	
Yoldiella leonilda (Dall, 1908)	Dall, 1908 (U.S.S. *Albatross* station 3360, in 1672 fm, not figured, USNM 122909).
LIMOPSIDAE	
Limopsis tenella Jeffreys, 1876	as *L. compressus* Dall in Dall (1908) (U.S.S. *Albatross* stations 3360 and 3361, in 1471-1672 fm, line drawing, USNM 122889); as *L. dalli* Lamy, reported at Isla del Coco, Costa Rica (Montoya, 1983).
Limopsis panamensis Dall, 1902	as *L. juarezi* Dall in Dall (1908) (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, USNM 122891).
PROPEAMUSSIIDAE	
Propeamussium meridionale (E.A. Smith, 1885)	as *Amusium (Propeamusium) malpelonium* n. sp. in (Dall, 1908) (live, U.S.S. *Albatross* stations 3360, 3374, 3381, 3361, in 1471-1823 fm, line drawing, USNM 122871); Grau (1959, w/ image, 19.5 mm H, 20 mm L, ex Grau Collection).
VESICOMYIDAE	
Vesicomya (*Vesicomya*) *stearnsii* (Dall, 1895)	as *Vesicomya ovalis* in Dall, 1908 (U.S.S. *Albatross* station 3360, in 1672 fm, USNM 106898).
CUSPIDARIIDAE	

Myonera garretti Dall, 1908	Dall, 1908 (described from a single specimen, type locality: U.S.S. *Albatross* station 3380, SE of Isla de Malpelo, Golfo de Panamá (04°03'00"N, 81°31'00") in 899 fm, line drawing. Holotype, USNM 122941); Bernard, 1974; Coan et al., 2000.
POROMYIDAE	
Dermatomya mactroides (Dall, 1889)	as *Poromya equatorialis* in Dall (1908) (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, USNM 122942).
GASTROPODA	
TROCHIDAE	
Calliotropis equatorialis (Dall, 1896)	as *Solariella* in Dall (1908) (U.S.S. *Albatross* station 3375, in 1201 fm, line drawing), reported off Isla del Coco, Costa Rica (Dall, 1908; Montoya, 1983).
EULIMIDAE	
Stilifer (*Mucronalia*) sp. indeterminate	Dall, 1908 (U.S.S. *Albatross* station 3381, in 1772 fm, on crinoid species, "...the figure is insufficient on which to base a specific description" (Dall, 1908); species not described by Dall, delete Malpelo record herein.
NATICIDAE	
Choristes carpenteri Dall, 1896	Dall, 1908 (U.S.S. *Albatross* station 3361, in 1471 fm, line drawing).
Polinices (*Euspira*) *agujanus* Dall, 1908	Dall, 1908 (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing); known only from the holotype from Peru, a second "dead and worn" deep-water specimen cited by Dall (1908) as "probably" the same species; specimen never found at USNM (Marincovich, 1977), delete Malpelo record herein.
Polinices (*Euspira*) *pardoanus* Dall, 1908	Dall, 1908 (U.S.S. *Albatross* station 3361, in 1471 fm, USNM 123046), reported at Isla del Coco, Costa Rica, in Dall (1908).
FASCIOLARIIDAE	
Exilioidea rufocaudatus (Dall, 1896)	as *Fusinus* in Dall (1908) (U.S.S. *Albatross* stations 3360 and 3374, in 1270-1879 fm, line drawing, USNM 123006).
Adelomelon benthalis (Dall, 1896)	Dall, 1908 (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, USNM 122998).
Tractolira sparta Dall, 1896	Dall, 1908 (U.S.S. *Albatross* stations 3360 and 3374, in 1672-2232 fm, line drawing, USNM 122999).
TURRIDAE	
Cryptogemma benthima (Dall, 1908)	as *Gemmula* in Dall (1908) (U.S.S. *Albatross* station 3360, in 812-1360 fm, 2 line drawings).

Aforia (*Steiraxis*) *aulaca* (Dall, 1896)	as *Steiraxis* in Dall (1908) (U.S.S. *Albatross* station 3381, in 1772 fm, line drawing, holotype, USNM 123098).
Leucosyrinx herilda (Dall, 1908)	as *Gemmula* in Dall (1908) (U.S.S. *Albatross* station 3360, in 1672 fm, holotype, USNM 123091).
Borsonella (*Borsonellopsis*) *agassizii* (Dall, 1908)	as *Borsonia* in Dall (1908) (U.S.S. *Albatross* station 3361, in 1471 fm, line drawing, holotype, USNM 123107).
Borsonella (*Borsonellopsis*) *erosina* (Dall, 1908)	as *Leucosyrinx* in Dall (1908) (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, lectotype, USNM 123106).
Phymorhynchus castaneus (Dall, 1895)	as *Pleurotomella* in Dall (1908) (U.S.S. *Albatross* station 3374, in 1823 fm, line drawing).
Phymorhynchus clarinda (Dall, 1908)	as *Pleurotomella* in Dall (1908) (U.S.S. *Albatross* station 3381, in 1772 fm, line drawing, holotype, USNM 123097); probably a synonym of *Phymorhynchus castaneus* in Bouchet & Warén (1980).
SCAPHOPODA	
DENTALIIDAE	
Dentalium (*Fissidentalium*) *megathyris* Dall, 1890	var. *panamense* in Dall (1908) (U.S.S. *Albatross* stations 3360, 3361 and 3381, in 1471-1772 fm, line drawing, USNM 122982, 122977 and 122975).
SIPHONODENTALIIDAE	
Cadulus (Striocadulus) albicomatus Dall, 1890	Dall, 1908 (U.S.S. *Albatross* station 3360, in 1672 fm, line drawing, USNM 122993).
CEPHALOPODA	
ARGONAUTIDAE	
Argonauta pacifica Dall, 1869	Dall, 1908 (fragments, U.S.S. *Albatross* station 3374).

Plate 1

Figures 1, 1a *Arca* (*Arca*) *mutabilis* (Sowerby, 1833).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.143'N, 81°36.667'W), live, under rocks and coral, 18 to 31 m (60 to 103 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 28 March 1998. Size: 24.5 mm.

Figure 2 *Acar gradata* (Broderip & Sowerby, 1829).
Isla de Malpelo, Colombia, "Carl's Corner" (03°59.900'N, 81°36.907'W), live, attached to underside of turnable rock, 11 to 20 m (35 to 66 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 19.2 mm.

Figures 3, 3a *Barbatia* (*Cucullaearca*) *reeveana* (d'Orbigny, 1846).
Isla de Malpelo, Colombia, "Saul/David", South Rocks (03°59.816'N, 81°36.904'W), live, on underside of rock, 12 to 30 m (40 to 100 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 60.0 mm.

Figure 4 *Philobrya setosa* (Carpenter, 1864).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), SCUBA, H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 2.5 mm (SEM).

Figure 4a *Philobrya setosa* (Carpenter, 1864).
Closeup of sharply demarcated prodissoconch (size: 0.36 mm, SEM).

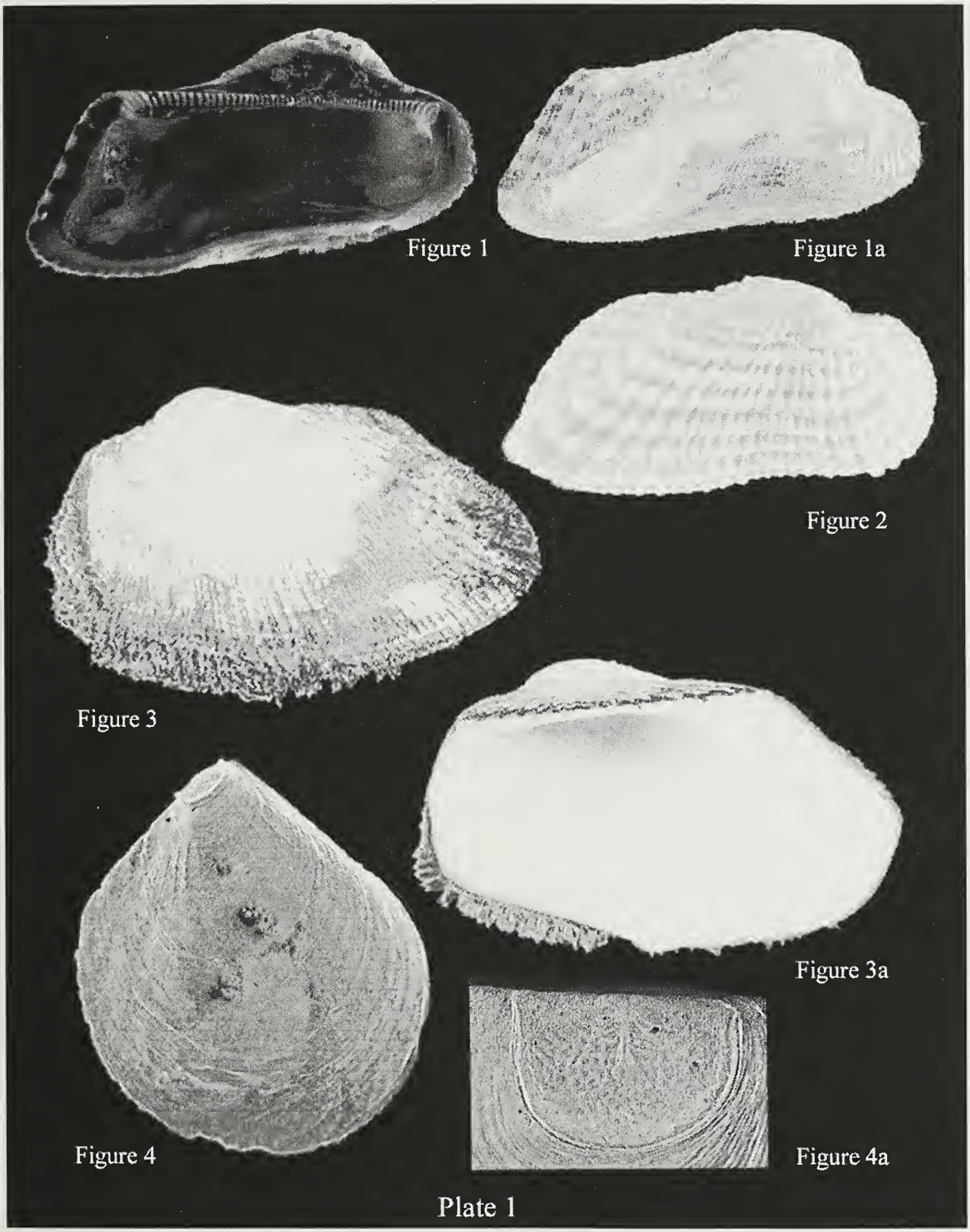
Figure 1
Figure 1a
Figure 2
Figure 3
Figure 3a
Figure 4
Figure 4a

Plate 1

Plate 2

Figure 1 *Lithophaga* (*Diberus*) *plumula* (Hanley, 1843).
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), dead, scree slope of turnable rocks, shakings, 12 to 23 m (40 to 77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 4.2 mm (juvenile).

Figure 2 *Lithophaga* (*Myoforceps*) *aristata* (Dillwyn, 1817).
Isla de Malpelo, Colombia, "Bombs Away" (03°59.922'N, 81°36.502'W), sand and rubble, 14 to 23 m (45 to 75 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 11.8 mm.

Figure 3 *Leiosolenus laevigata* (Quoy & Gaimard, 1835).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.13'N, 81°36.73'W), rocks and light silty sand, 15 to 26 m (50 to 85 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 21.9 mm.

Figure 4 *Septifer zeteki* Hertlein & Strong, 1946.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.160'N, 81°36.745'W), live, attached to underside of rock, 12 to 20 m (40 to 64 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 7.5 mm.

Figure 5 *Pteria sterna* (Gould, 1851).
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), live, attached to gorgonian sp., 41 m (135 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 60.0 mm.

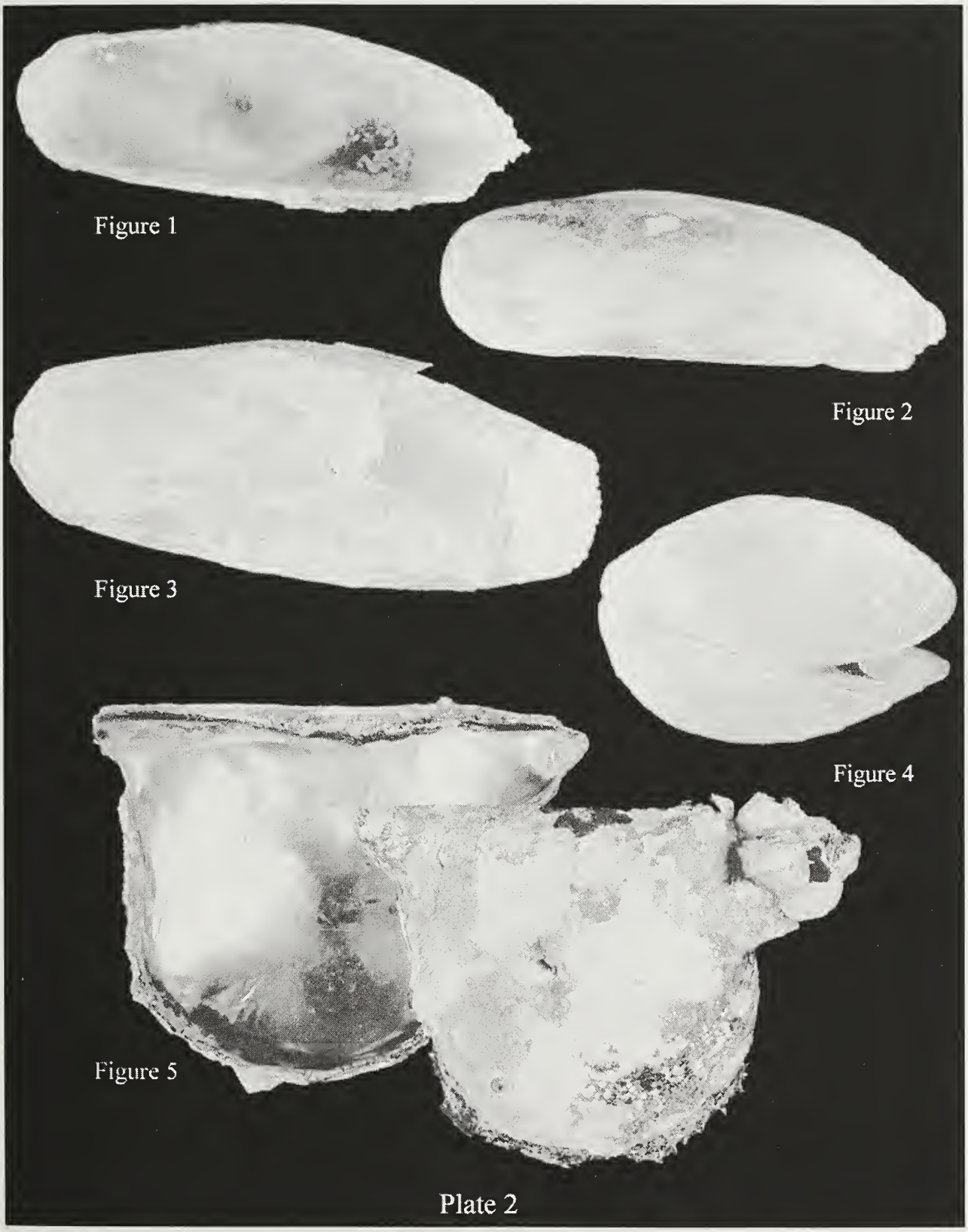

Plate 2

Plate 3

Figure 1 *Isognomon* (*Melina*) *janus* Carpenter, 1857.
Isla de Malpelo, Colombia, "Carl's Corner" (03°59.900'N, 81°36.907'W), live, attached to underside of turnable rock, 11 to 20 m (35 to 66 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 36.0 mm.

Figures 2, 2a *Isognomon* (*Melina*) cf. *recognitus* (Mabille, 1895).
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), dead, among rocks and coral, 12 to 24 m (45 to 80 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 23.8 mm.

Figure 3 *Malleus* (*Malvufundus*) cf. *regulus* (Forskål, 1775).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.13'N, 81°36.73'W), living in bore hole of dead coral, 15 to 26 m (50 to 85 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 16.0 mm. This species is also found in crevices of dead and living *Ostrea* sp.

Figure 4 Pinnidae sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" north end (04°00.388'N, 81°36.209'W), live, under turnable rock on scree slope, 10 m (33 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 29.0 mm.

Figure 5 *Limatula* (*Limatula*) cf. *similaris* (Dall, 1908).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), single valve, 35 m (115 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 4.5 mm (SEM).

Figure 5a *Limatula* (*Limatula*) cf. *similaris* (Dall, 1908).
Umbonal area of specimen shown in Figure 5. (SEM).

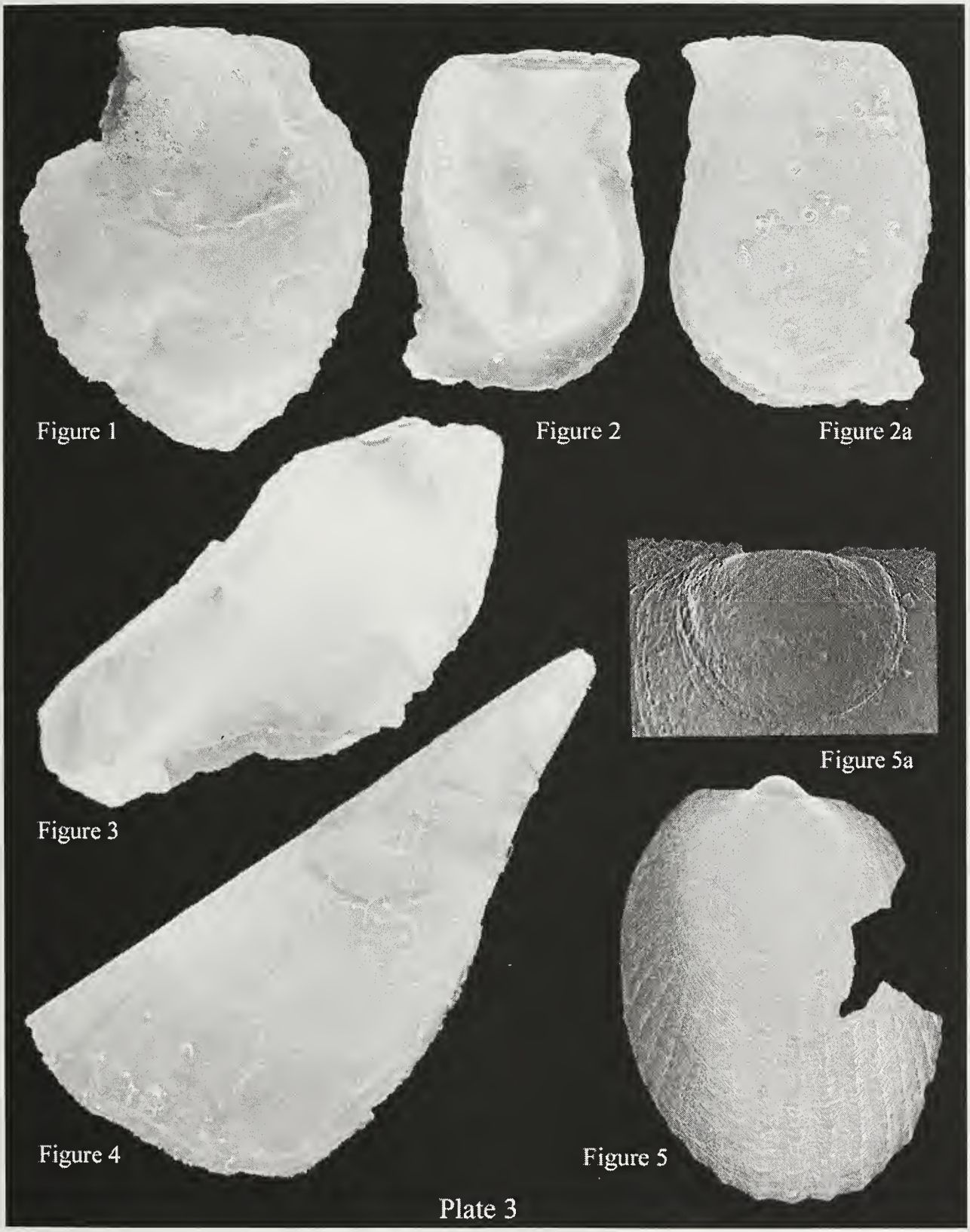
Figure 1
Figure 2
Figure 2a
Figure 3
Figure 5a
Figure 4
Figure 5

Plate 3

Plate 4

Figure 1 *Dendostrea folium* (Linnaeus, 1758).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.13'N, 81°36.73'W), live, attached to spine of *Eucidaris* sp., 15 to 26 m (50 to 85 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 13.5 mm.

Figure 2 Ostreidae sp. 1.
Isla de Malpelo, Colombia, "Widowmaker", South Rocks (03°59.816'N, 81°36.904'W), at base of rock wall w/ clusters of dead barnacles, living on dorsum of empty shell of *Tribulus planospira*, 11 to 24 m (35 to 78 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 8.0 to 17.0 mm.

Figure 3 Ostreidae sp. 2.
Isla de Malpelo, Colombia, "Saul/David", South Rocks (03°59.816'N, 81°36.904'W), live, on underside of rock, 12 to 30 m (40 to 100 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 37.0 mm.

Figure 3a Ostreidae sp. 2.
Interior and hinge view of specimen shown in Figure 3.

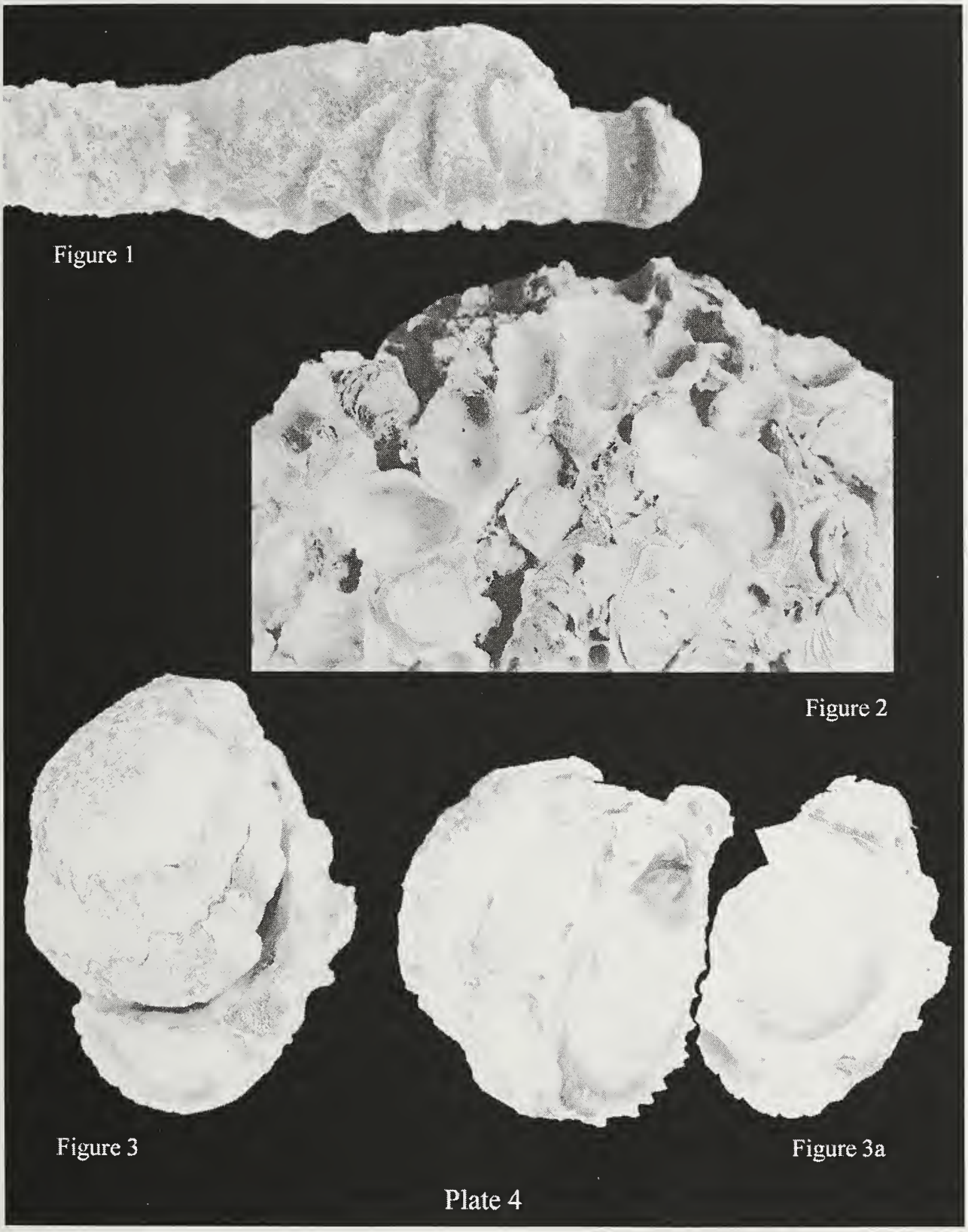

Figure 1

Figure 2

Figure 3

Figure 3a

Plate 4

Plate 5

Figure 1 Ostreidae sp. 3.
Isla de Malpelo, Colombia, "Carl's Corner" (03°59.900'N, 81°36.907'W), live, attached to underside of turnable rock, 12 to 25 m (40 to 80 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 9 March 2000. Size: 54.0 mm. Reddish radial markings on somewhat flattened valves.

Figure 2 Ostreidae sp. 4.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), living (possibly juveniles), on dead *Pleuroploca princeps*, sloping sand and rubble, 9 to 38 m (30 to 125 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 0.7 mm.

Figure 3 Ostreidae sp. 5.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.388'N, 81°36.209'W), living on dead coral branch, 8 to 20 m (25 to 65 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 40.0 mm.

Figure 4 *Hyotissa hyotis* (Linnaeus, 1758).
Isla de Malpelo, Colombia, "Saul/David", South Rocks (03°59.816'N, 81°36.904'W), live, between rocks and coral, 28 m (90 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 146.0 mm. Note strong plications on the margins.

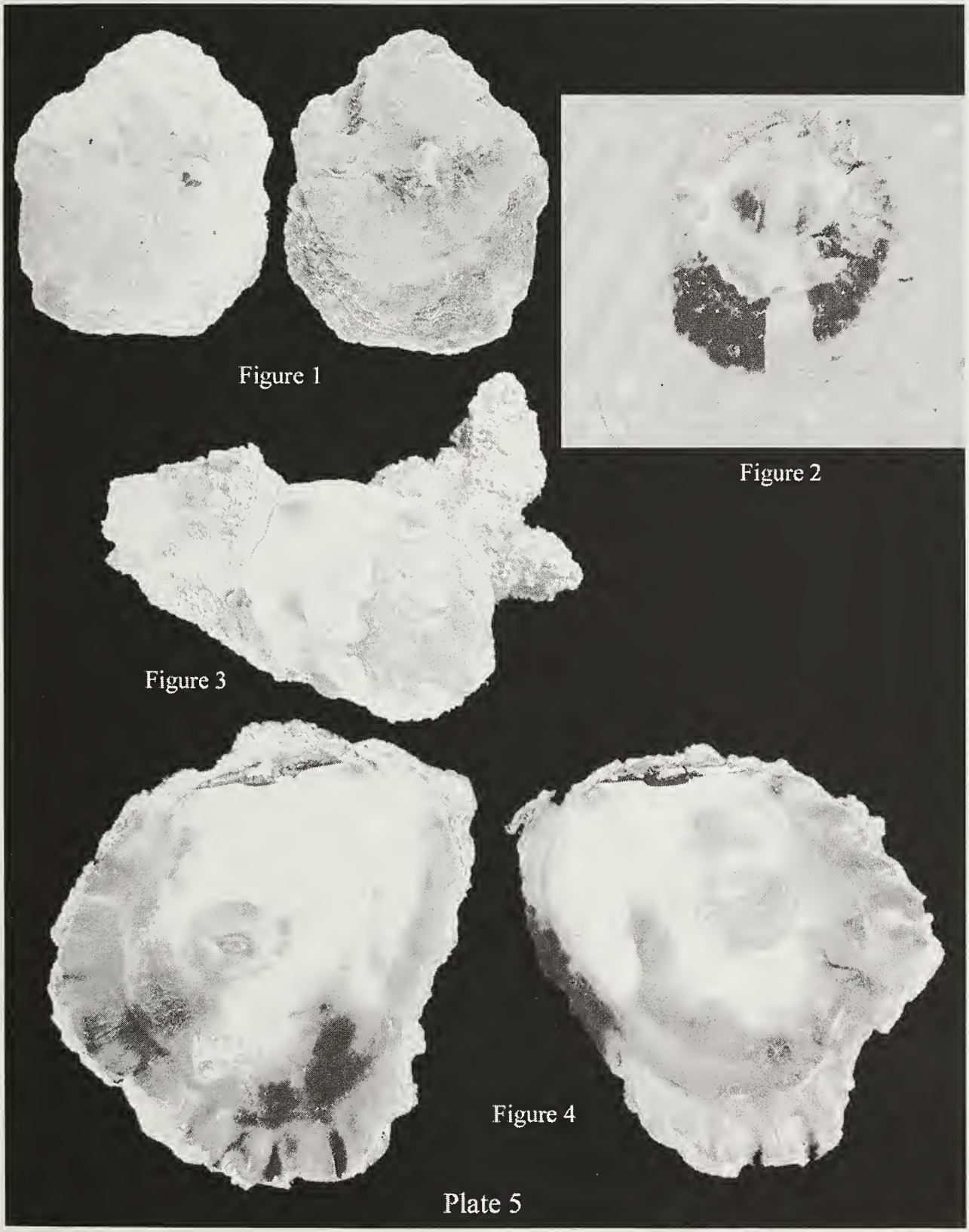

Plate 5

Plate 6

Figure 1 *Oppenheimopecten perulus* (Olsson, 1961).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), sloping sand and rubble, 35 m (115 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 23.0 mm (left valve).

Figures 2, 2a *Nodipecten arthriticus* (Reeve, 1853).
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), living, sloping sand and rubble, 24 m (80 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 98.0 mm.

Figure 3 Propeamussiidae sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 3.1 mm (right valve, SEM).

Figure 4 *Spondylus linguaefelis* Sowerby, 1847.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.13'N, 81°36.73'W), live, attached to underside of turnable rock, 15 to 26 m (50 to 85 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 80.0 mm.

Figures 5, 5a Lucinidae sp. 1.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.13'N, 81°36.73'W), dead, under rocks, light silty sand, 17 m (55 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 10.0 mm.

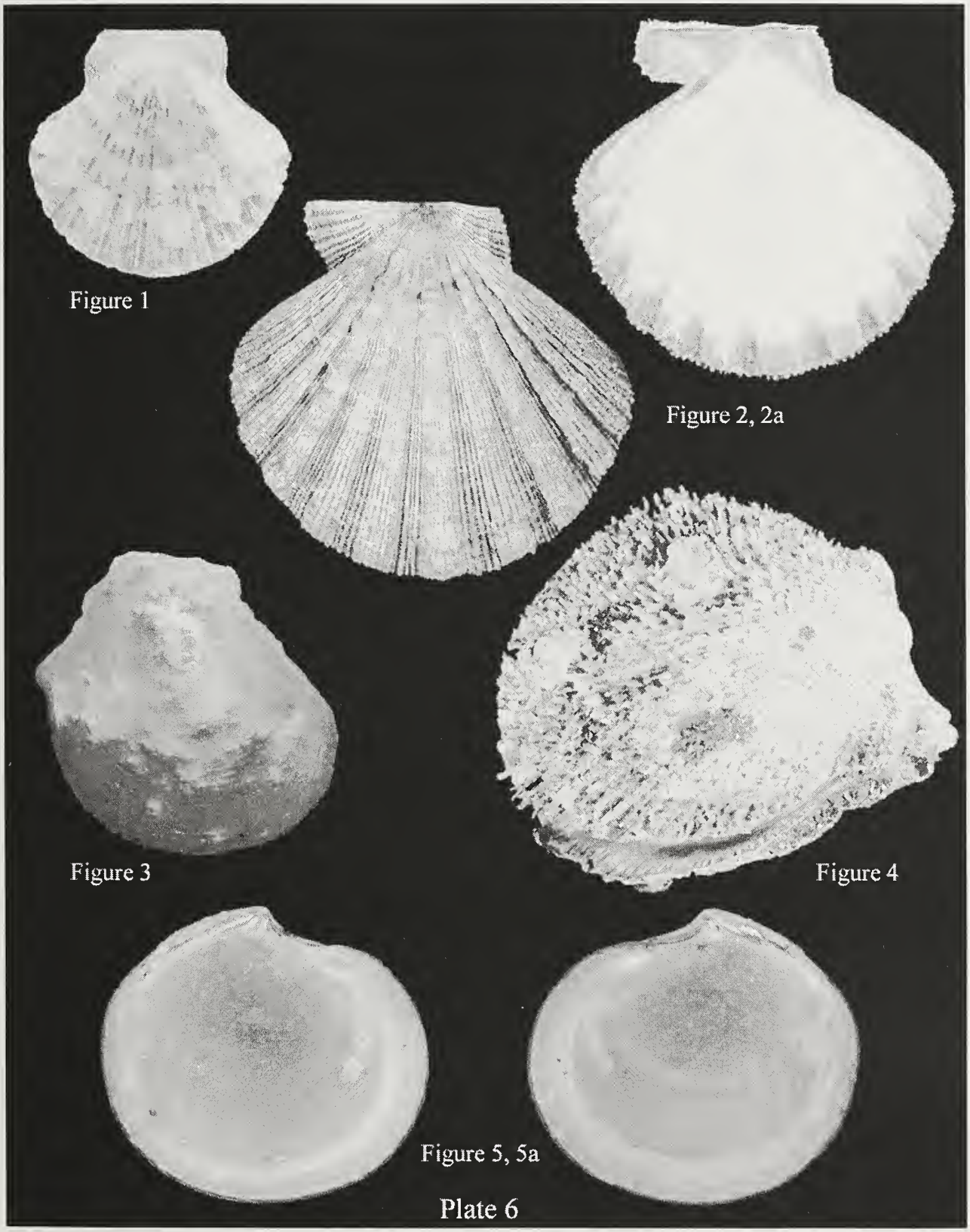

Plate 6

Plate 7

Figures 1, 1a, 1b *Condylocardia digueti* Lamy, 1916.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, sloping with turnable scree, shakings, 18 m (60 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.56 mm (SEM).

Figures 2, 2a, 2b *Condylocardia* sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), sand and rubble, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 2.25 mm (SEM).

Figures 3, 3a, 3b *Condylocardia* sp. 2.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, gorgonian shakings on vertical wall, 24 to 34 m (80 to 113 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 1.89 mm (SEM).

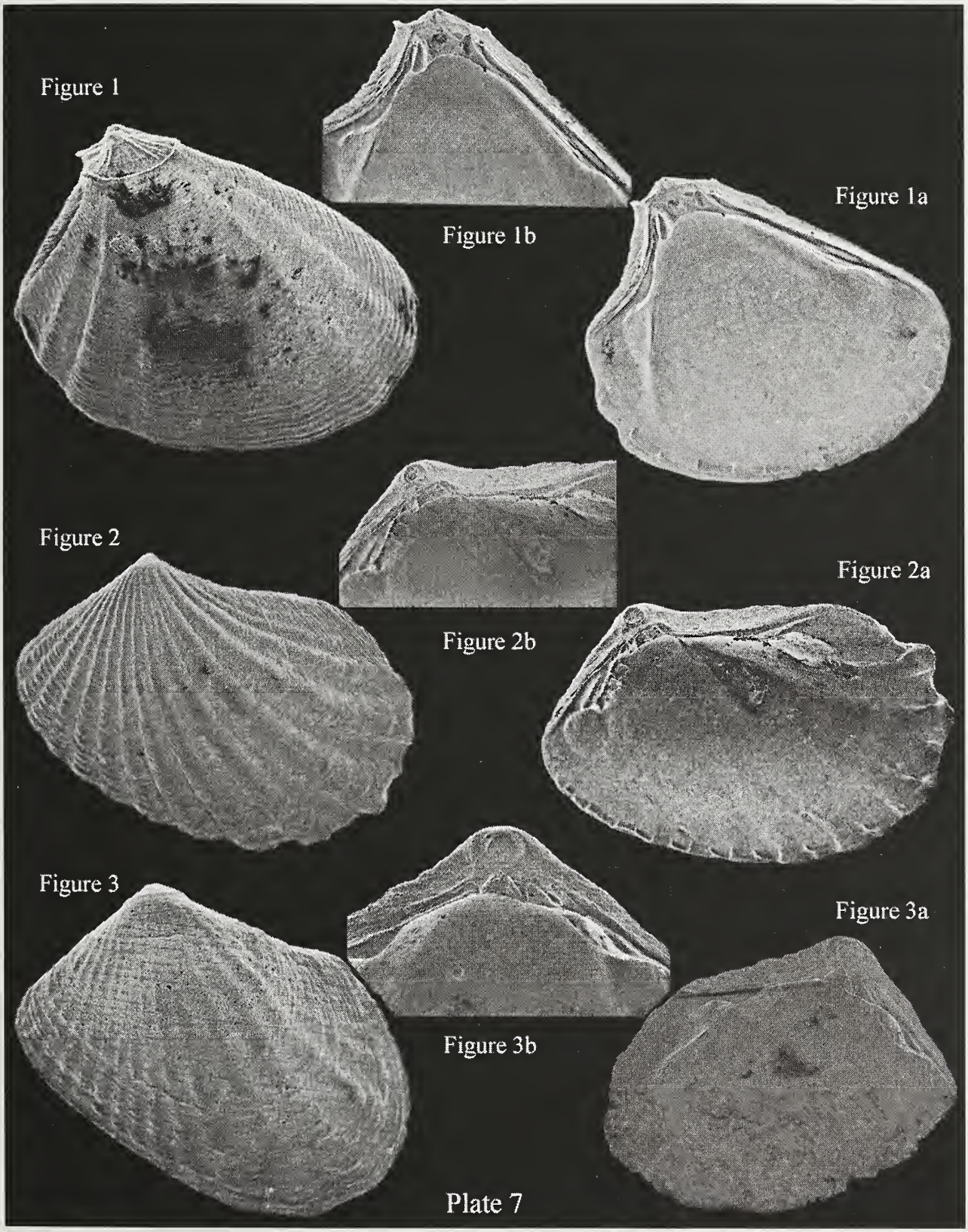
Figure 1
Figure 1b
Figure 1a
Figure 2
Figure 2b
Figure 2a
Figure 3
Figure 3b
Figure 3a
Plate 7

Plate 8

Figure 1 *Pseudochama panamensis* (Reeve, 1847).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.13'N, 81°36.73'W, dead, right valve attached to rock rubble, 41 m (135 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 35.0 mm.

Figure 2 *Cymatioa electilis* (Berry, 1963).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), living in bevy under rock, in silty sand, 15 m (50 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 19.1 mm. Note fragment of valve at umbo.

Figures 3, 3a, 3b *Kellia suborbicularis* (Montagu, 1803).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), barnacle shakings, 9 to 18 m (30 to 58 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 9 March 2000. Size: 2.1 mm (SEM).

Figures 4a, 4b *Globivenus isocardia* (Verrill, 1870).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.143'N, 81°36.667'W), dead, on rock and coral rubble/sand, 18 to 31 m (60 to 103 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 28 March 1998. Size: 71.0 mm.

Figures 5, 5a, 5b *Timoclea squamosa* (Carpenter, 1857).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 2.3 mm (SEM).

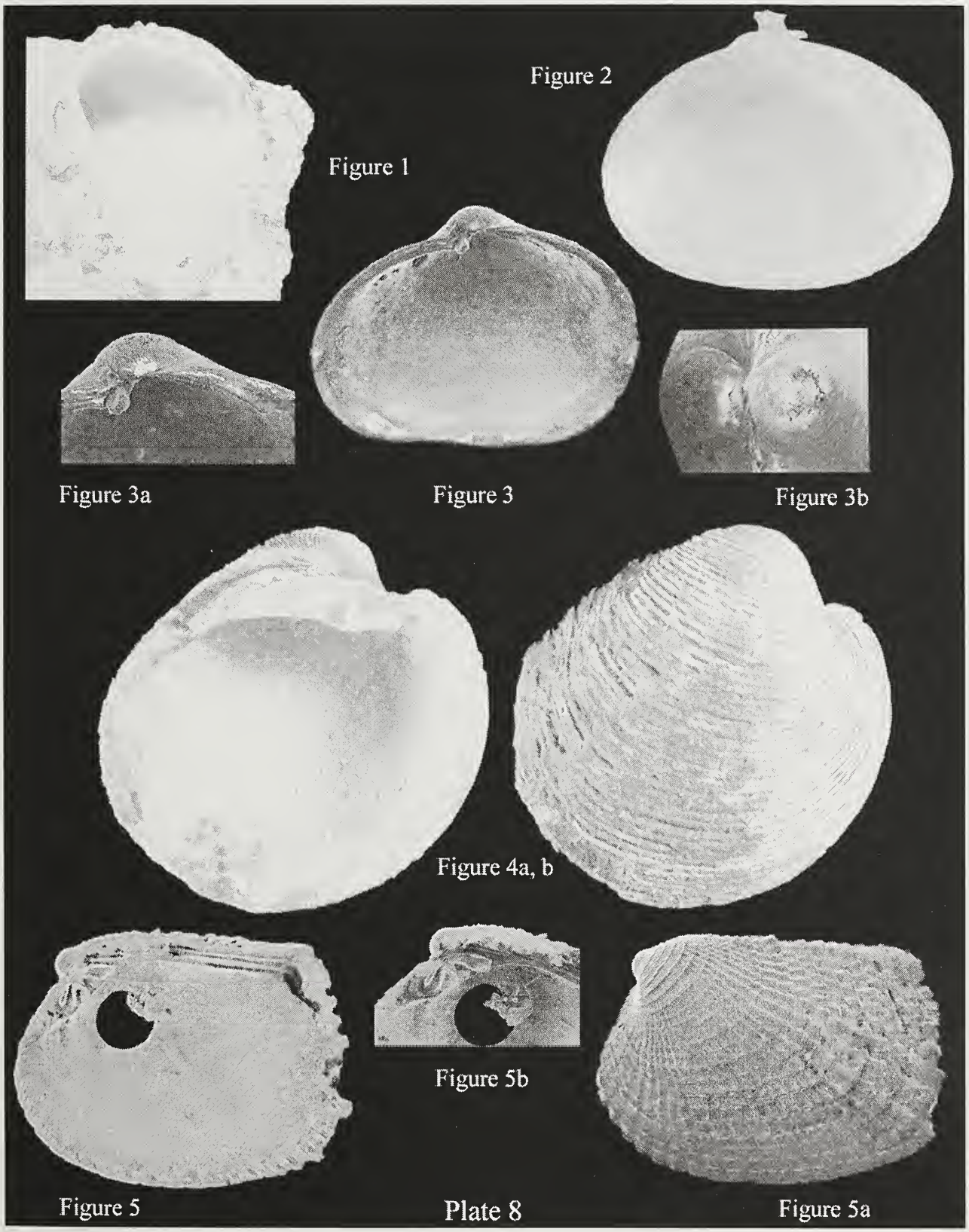
Figure 2
Figure 1
Figure 3a
Figure 3
Figure 3b
Figure 4a, b
Figure 5b
Figure 5
Plate 8
Figure 5a

Plate 9

Figures 1, 1a *Neolepton* (*Stohleria*) *subtrigonum* (Carpenter, 1857).
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), sloping sand and rubble, shakings, 9 to 38 m (30 to 125 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 2.4 mm (SEM).

Figures 1b, 1c *Neolepton* (*Stohleria*) *subtrigonum* (Carpenter, 1857).
Hinge and umbonal areas of specimens shown in Figure 1 and 1a. (SEM).

Figure 2 *Semele jamesi* Coan, 1988.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), ?live, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 2.2 mm (SEM).

Figure 2a *Semele jamesi* Coan, 1988.
Protoconch of specimen shown in Figure 2.

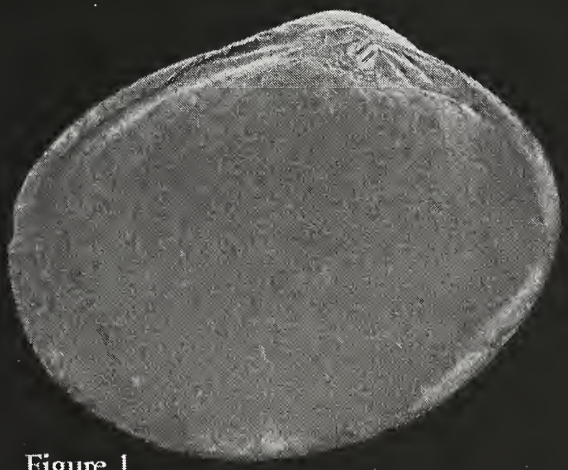

Figure 1

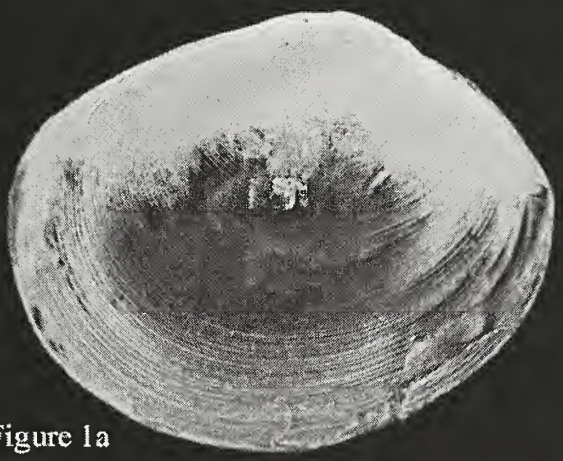

Figure 1a

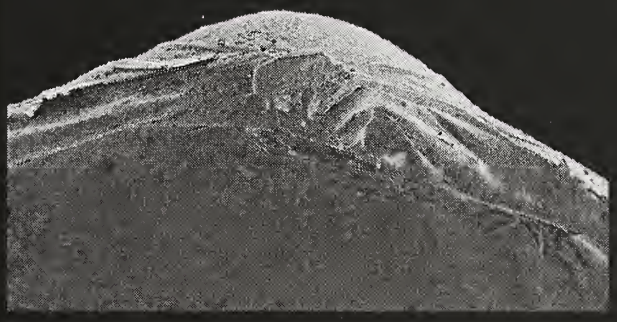

Figure 1b

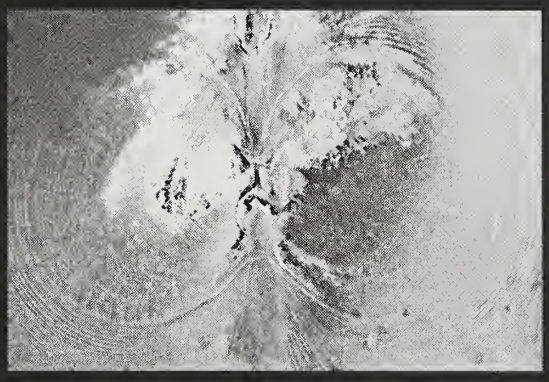

Figure 1c

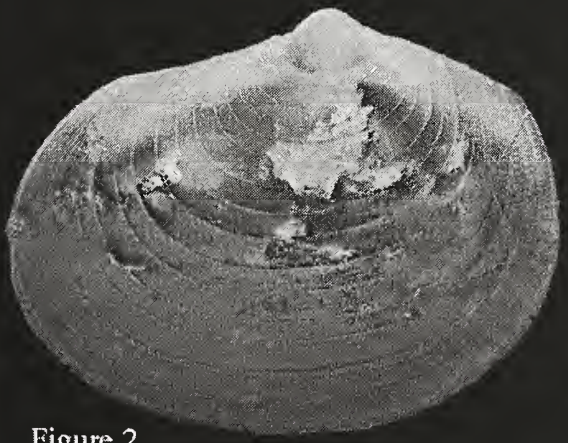

Figure 2

Figure 2a

Plate 9

Plate 10

Figures 1, 1a, 1b cf. *Zylophaga* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), dead, rocks in silty sand, shakings, 15 m (50 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.0 mm (SEM).

Figures 2, 2a Bivalve sp. 1.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), rock and dead coral shakings, 12 to 30 m (40 to 100 ft), H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 1.6 mm (SEM).

Figures 3, 3a Bivalve sp. 2.
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), under rocks and coral, 18 to 30 m (60 to 97 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 4.5 mm.

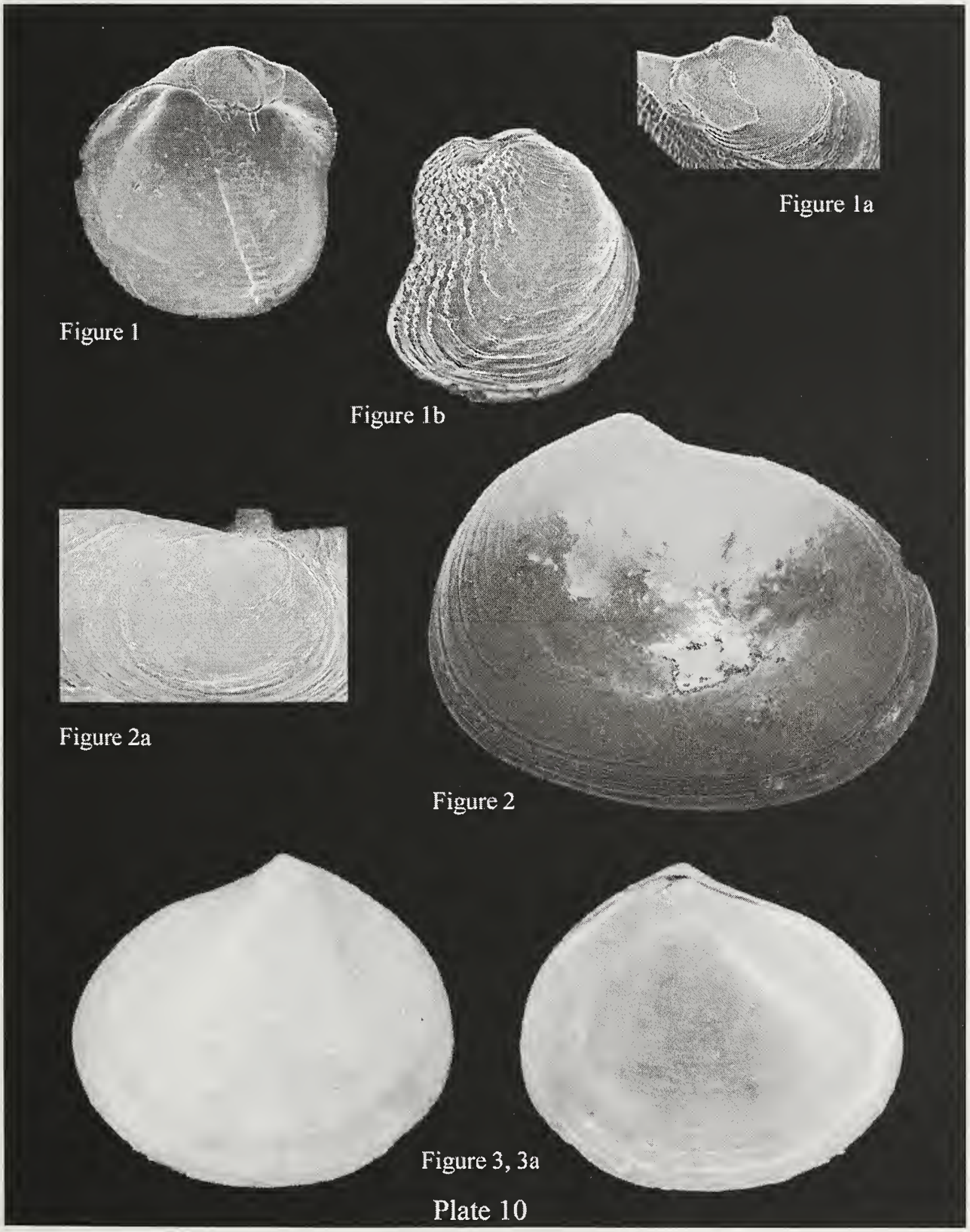

Figure 1

Figure 1a

Figure 1b

Figure 2a

Figure 2

Figure 3, 3a

Plate 10

Plate 11

Figure 1 *Sinezona rimuloides* (Carpenter, 1865).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), shakings, 30 to 57 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 0.69 mm (SEM), specimen lost.

Figure 1a *Sinezona rimuloides* (Carpenter, 1865).
Protoconch of specimen shown in Figure 1. (SEM).

Figure 2 *Sinezona* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 0.55 mm (SEM). Sculpture lacking, wide selenizone, no slit although apertural lip is broken. Debris evident in aperture.

Figure 2a *Sinezona* sp. 1.
Apical view of specimen shown in Figure 2. (SEM).

Figure 2b *Sinezona* sp. 1.
Protoconch of specimen shown in Figure 2. (SEM).

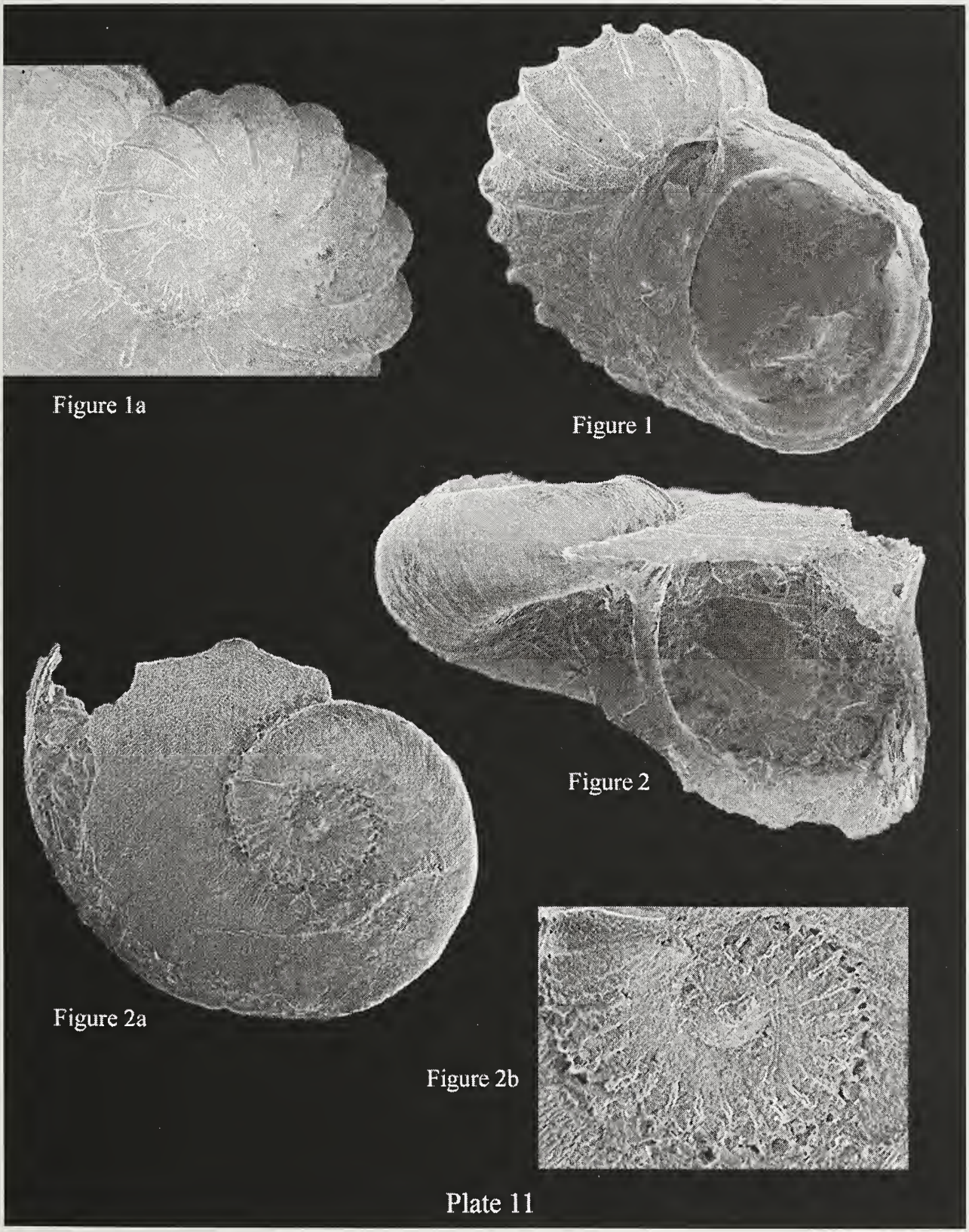

Figure 1a

Figure 1

Figure 2

Figure 2a

Figure 2b

Plate 11

Plate 12

Figure 1 Scissurellidae sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), dead, rock and dead coral shakings, 9 to 38 m (30 to 125 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 0.7 mm (SEM). No selenizone nor foramen present, debris evident in aperture.

Figure 1a Scissurellidae sp. 1.
Protoconch of specimen shown in Figure 1. (SEM). Note the similarities to a *Sinezona* protoconch.

Figure 2 Scissurellidae sp. 2.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, shakings, 30 to 57 m (100 to 185 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 0.57 mm (SEM). No selenizone nor foramen present, debris evident in aperture.

Figure 2a Scissurellidae sp. 2.
Protoconch of specimen shown in Figure 2. (SEM).

Figure 3 *Diodora inaequalis* (Sowerby, 1835).
Isla de Malpelo, Colombia, "Saul/David", South Rocks (03°59.816'N, 81°36.904'W), live, on underside of rock, 15 m (50 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 21.7 mm.

Figure 4 *Diodora punctifissa* McLean, 1970.
Isla de Malpelo, Colombia, "Saul/David", South Rocks (03°59.816'N, 81°36.904'W), dead, under rocks and dead coral, 12 m (40 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 8.6 mm. Posterior margin is broken.

Figure 5 *Diodora saturnalis* (Carpenter, 1864).
Isla de Malpelo, Colombia, "Bombs Away" (03°59.922'N, 81°36.502'W), live, underside of rock, 14 to 23 m (45 to 75 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 7.2 mm.

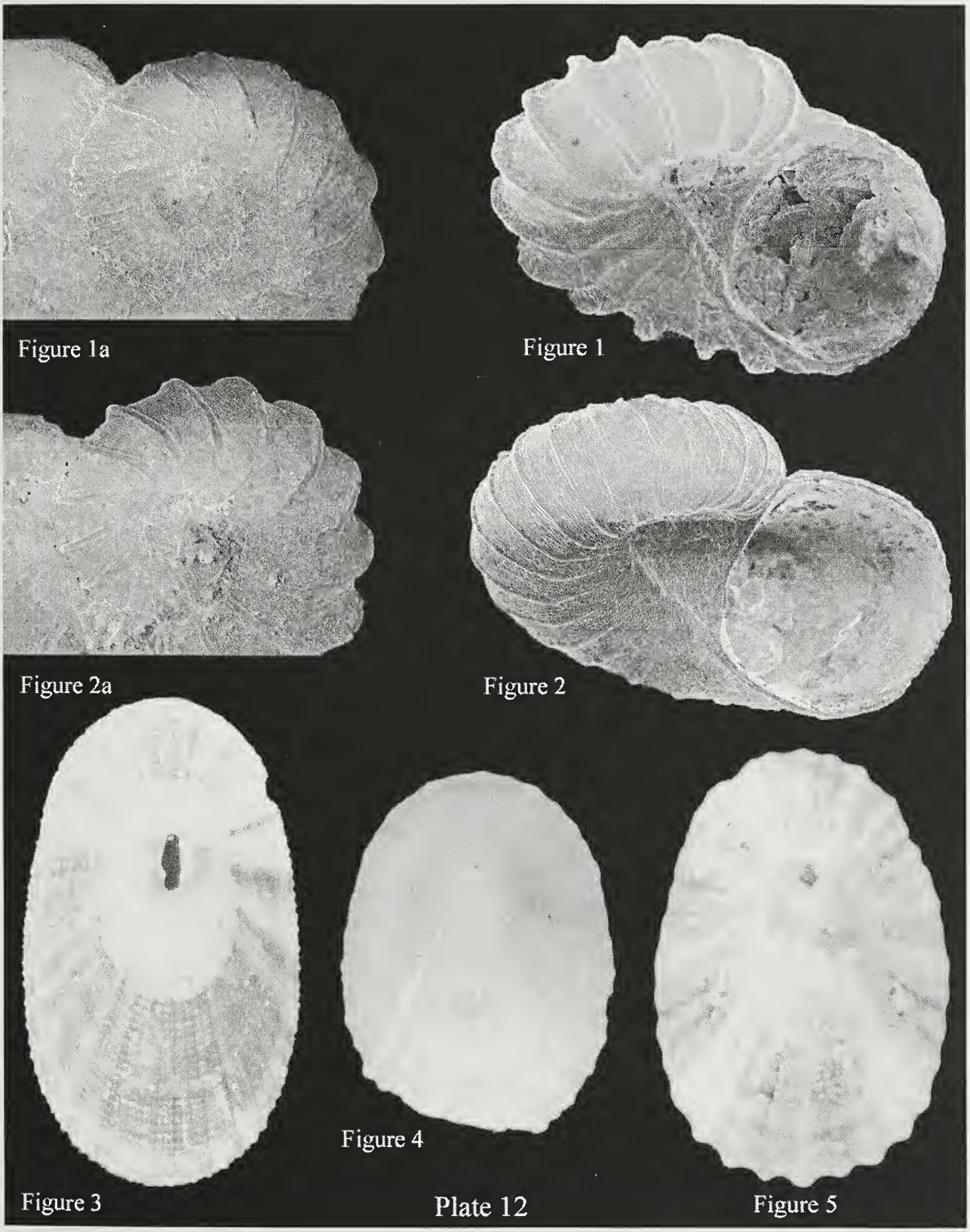
Figure 1a
Figure 1
Figure 2a
Figure 2
Figure 4
Figure 3
Plate 12
Figure 5

Plate 13

Figure 1 *Parviturbo acuticostatus* (Carpenter, 1864).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.44 mm (SEM).

Figure 2 *Pachystremiscus solitarius* (Hertlein & Allison, 1968).
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998, live, shakings, H_2O 78-82°F, leg. K.L. Kaiser. Size: 1.01 mm (SEM).

Figure 2a *Pachystremiscus solitarius* (Hertlein & Allison, 1968).
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), shakings, live, H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 1.09 mm (SEM). Apertural view of second specimen with operculum (diameter of operculum: 0.21 mm).

Figure 3 *Pachystremiscus* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), SCUBA, H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.4 mm (SEM). Note central carina on body whorl.

Figure 3a *Pachystremiscus* sp. 1.
Apertural view and corneous operculum of specimen shown in Figure 3. (SEM).

Figure 3b *Pachystremiscus* sp. 1.
Protoconch of specimen shown in Figure 3. (SEM).

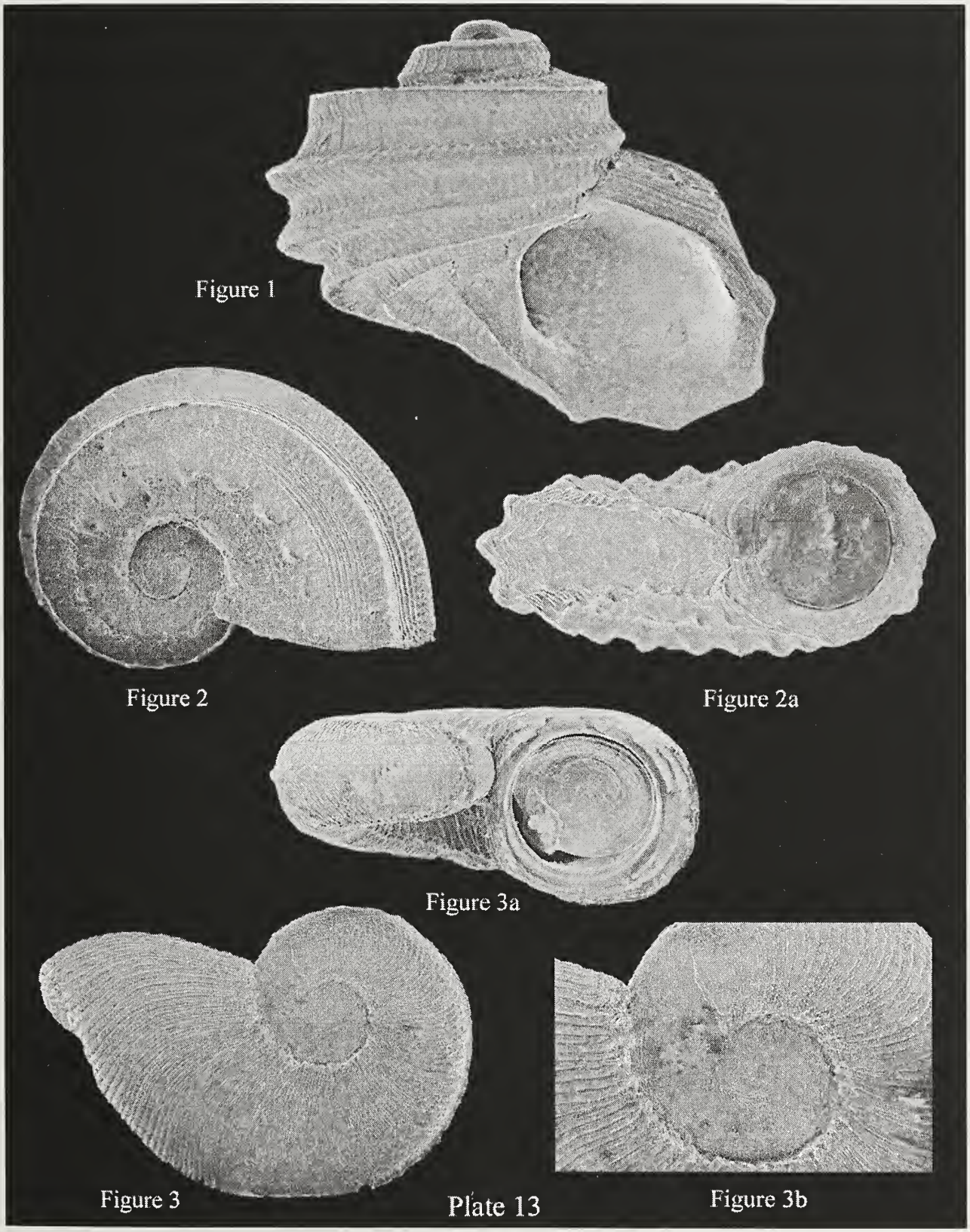

Plate 13

Plate 14

Figure 1 *Pachystremiscus* sp. 2.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), M/V *The Inzan Tiger*, 13 March 2000, sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser. Size: 0.75 mm (SEM). Debris evident in aperture.

Figure 2 *Pachystremiscus* sp. 3.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), rock and dead coral shakings, 9 to 23 m (30 to 75 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.19 mm (SEM). Debris evident in aperture.

Figure 3 *Pachystremiscus* sp. 4.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), live, rock and dead coral shakings, H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 0.62 mm (SEM). Apertural view with typical corneous operculum (concentric with central nucleus, size: 0.22 mm).

Figure 4 ?*Pachystremiscus* sp. 5.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), rock and dead coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 1.29 mm (SEM).

Figure 5 ?*Pachystremiscus* sp. 6.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 0.87 mm (SEM). Debris evident in aperture.

Figure 6 ?*Pachystremiscus* sp. 7.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), dead, rock and dead coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 0.8 mm (SEM). Debris evident in aperture.

Figure 7 ?*Pachystremiscus* sp. 8.
Isla de Malpelo, Colombia, "Widow Maker", South Rocks (03°59.816'N, 81°36.904'W), rock and dead coral shakings, 15 to 30 m (50 to 100 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26-27 March 1998. Size: 1.54 mm (SEM).

Figure 8 *Pelycidion kelseyi* (Bartsch, 1911).
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), rock and dead coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 1.19 mm (SEM). Debris evident in aperture.

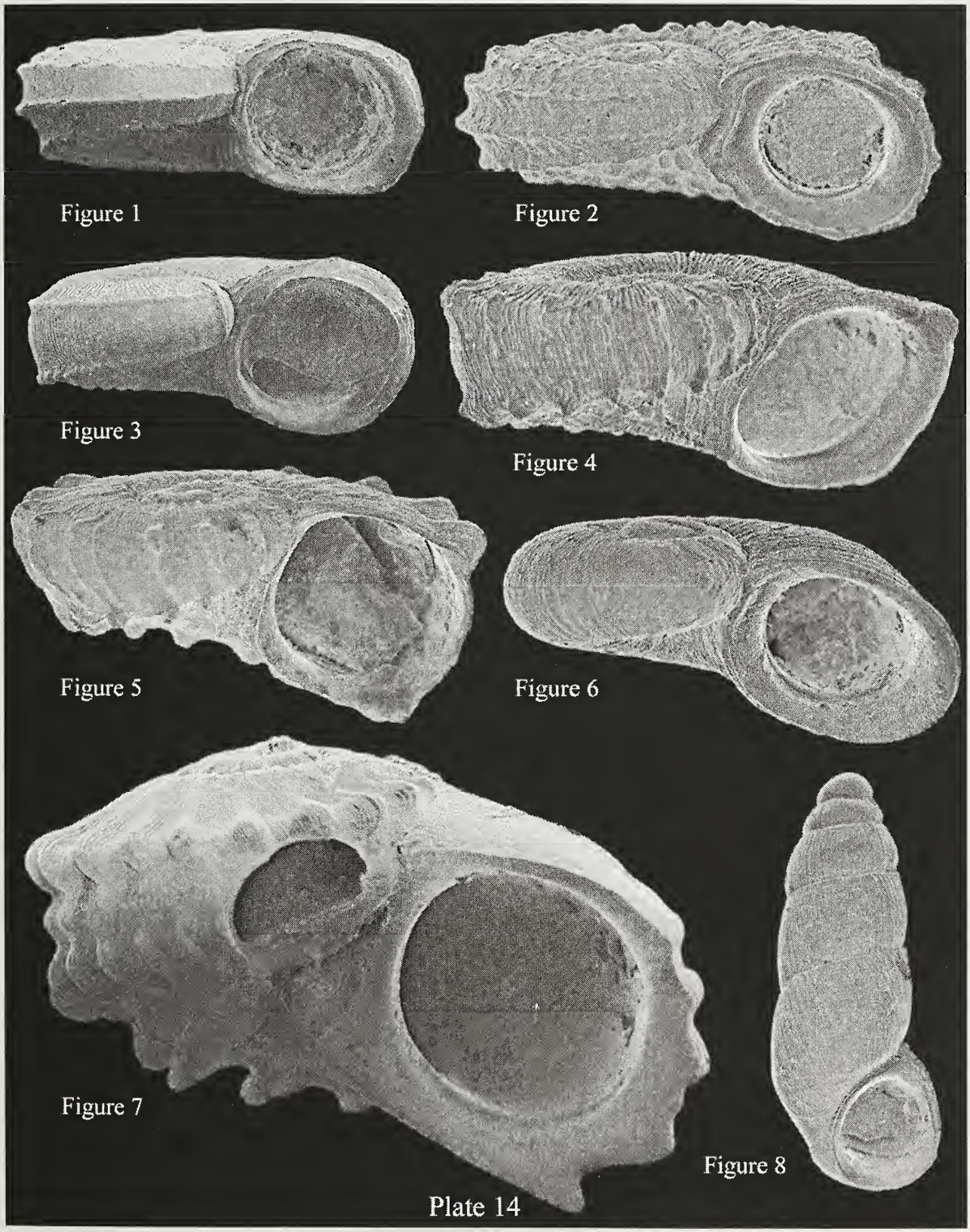
Figure 1
Figure 2
Figure 3
Figure 4
Figure 5
Figure 6
Figure 7
Figure 8

Plate 14

Plate 15

Figure 1 *Homalopoma* sp. 1.
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), dead, under rock, 18 to 29 m (60 to 97 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 5.9 mm. Photo: J.H. McLean.

Figure 1a *Homalopoma* sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, shakings, 30 to 57 m (100 to 185 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 2.0 mm, juvenile (SEM).

Figure 2 *Eulithidium diantha* (McLean, 1970).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 2.16 mm (SEM). Note distinctive sculpture on operculum, which is a generic level character.

Figure 3 *Nerita* (*Cymostyla*) *scabricosta* Lamarck, 1822.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), dead, rocks and coral rubble, 11 to 18 m (35 to 59 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 14.6 mm.

Figure 4 cf. *Plesiothyreus osculans* (C.B. Adams, 1852).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), dead, sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 2.48 mm, fragment (SEM).

Figure 5 *Littoraria* (*Protolittoraria*) *pintado pullata* (Carpenter, 1864).
Isla de Malpelo, Colombia, "Off and On Bay" left of cave (04°00.136'N, 81°36.639'W), intertidal, living on lava rock above splash zone, leg. K.L. Kaiser, M/V *The Inzan Tiger*, 30 March 1998. Size: 7.5 mm.

Figure 6 *Nodilittorina* (*?Fossarilittorina*) *modesta* (Philippi, 1846).
Isla de Malpelo, Colombia, "Off and On Bay" left of cave (04°00.136'N, 81°36.639'W), intertidal, living on lava rock above splash zone, leg. K.L. Kaiser, M/V *The Inzan Tiger*, 30 March 1998. Size: 8.5 mm.

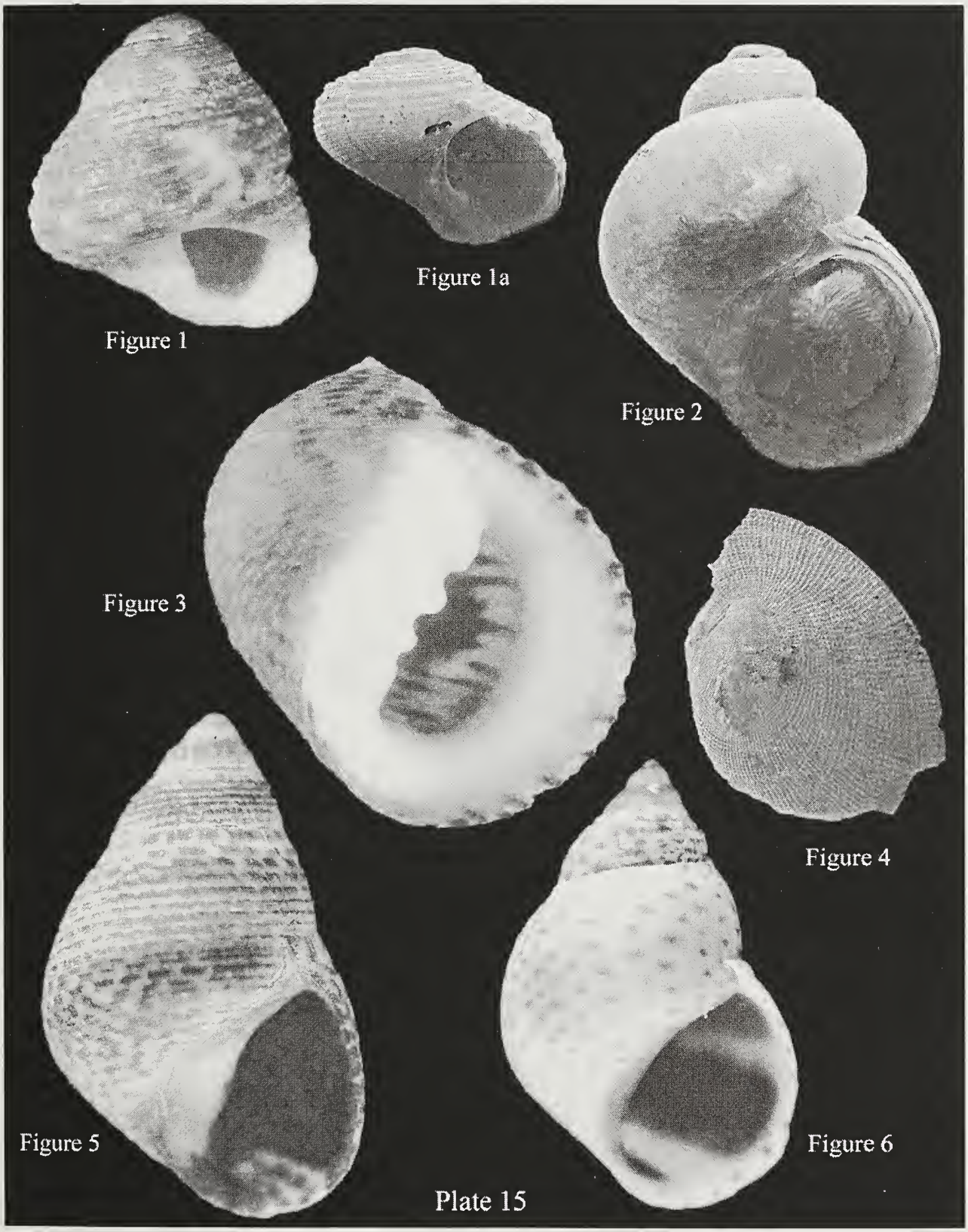
Figure 1
Figure 1a
Figure 2
Figure 3
Figure 4
Figure 5
Figure 6

Plate 15

Plate 16

Figure 1 *Alvania (Alvania)* cf. *inconspicua* (C.B. Adams, 1852).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, shakings, 30 to 57 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.01 mm (SEM). Note distinctive carina at top of spire. Debris evident in aperture.

Figure 2 *Alvania* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 3 March 2000. Size: 1.11 mm (SEM).

Figure 3 *Alvania* sp. 2.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.22 mm (SEM).

Figure 4 cf. *Onoba* sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, shakings, 30 to 57 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.2 mm (SEM). Debris evident in aperture.

Figure 4a cf. *Onoba* sp. 1.
Protoconch of specimen shown in Figure 4 (SEM).

Figure 5 cf. *Onoba* sp. 2.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), dead, rock and dead coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 1.46 mm (SEM).

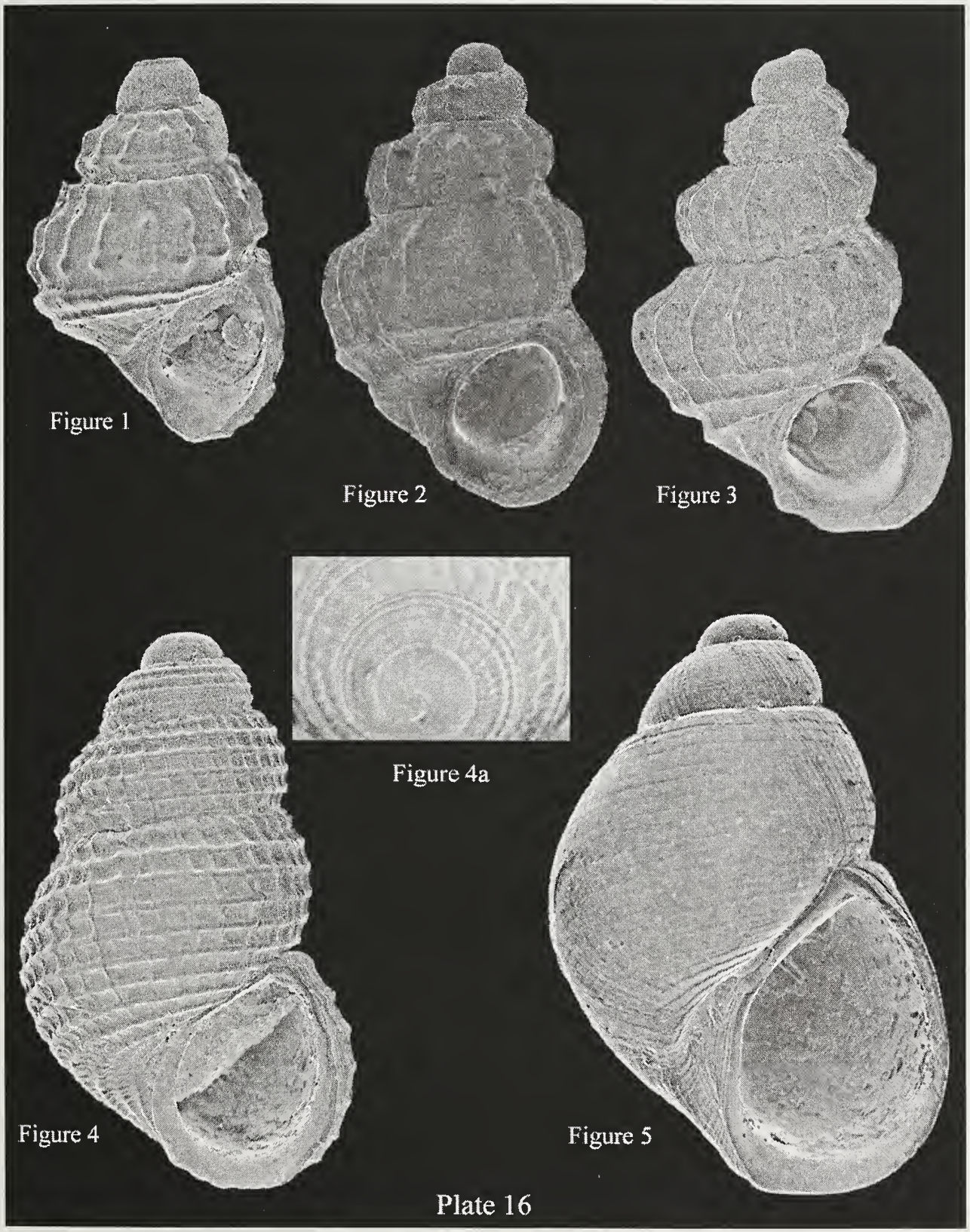

Plate 16

Plate 17

Figure 1 *Rissoina* (*Rissoina*) cf. *clandestina* (C.B. Adams, 1852).
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), dead, rock and dead coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 2.21 mm (SEM). Debris evident in aperture.

Figure 2 *Rissoina* (*Rissoina*) *effusa* Mörch, 1860.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), live, rock and dead coral shakings, 12 to 30 m (40 to 100 ft), H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 2.58 mm (SEM). Apertural view of specimen (diameter of operculum, 0.62 mm).

Figure 3 *Rissoina* (*Rissoina*) *stricta* Menke, 1850.
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), live, under rock, 18 to 30 m (60 to 97 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 6.6 mm. Operculum showing in aperture.

Figure 4 cf. *Rissoina* sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), rock and dead coral shakings, 9 to 23 m (30 to 75 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 3.48 mm (SEM).

Figure 5 cf. *Rissoina* sp. 2.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft),.H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.01mm (SEM). Debris evident in aperture.

Figure 6 cf. *Rissoina* sp. 3.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), rock and dead coral shakings, 9 to 38 m (30 to 125 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 1.12 mm, fragment (SEM).

Figure 7 *Folinia ericana* (Hertlein & Strong, 1951).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 2.26 mm, fragment (SEM).

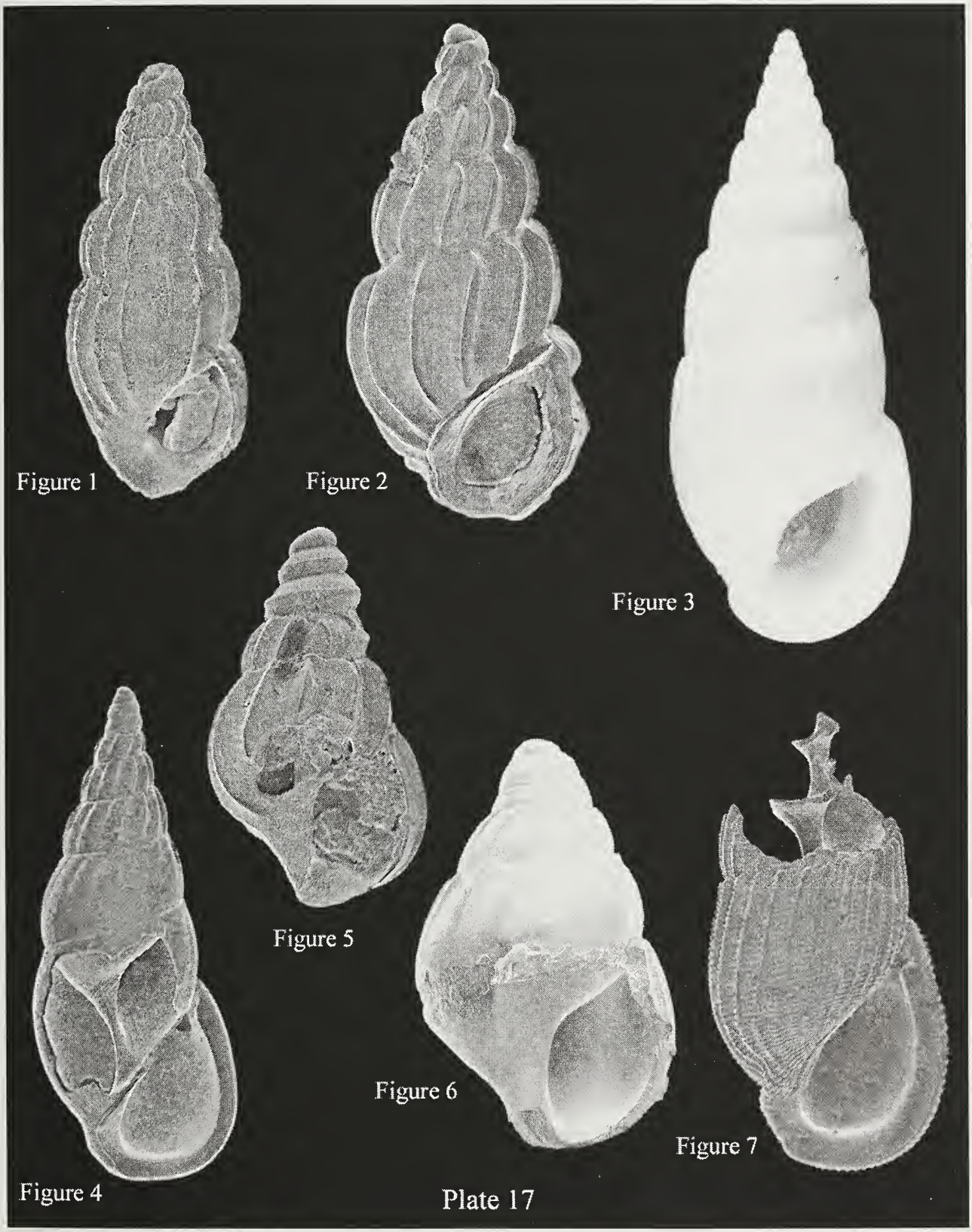
Figure 1
Figure 2
Figure 3
Figure 4
Figure 5
Figure 6
Figure 7
Plate 17

Plate 18

Figure 1 *Barleeia* cf. *bifasiata* (Carpenter, 1857).
Isla de Malpelo, Colombia, "Coral Gardens " (04°00.226'N, 81°36.247'W), rock and dead coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 1.17 mm (SEM). Color: opaque with golden tan spiral line. Debris evident in aperture.

Figure 2 *Barleeia* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.51 mm (SEM). Debris evident in aperture.

Figure 3 *Barleeia* sp. 2.
Isla de Malpelo, Colombia, "Hammerwall" (03°59.628'N, 81°36.841'W), surge swept barnacle covered rocks, gorgonians, shakings, 12 to 24 m (40 to 80 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 9 March 2000. Size: 1.74 mm (SEM). Note single carina on body whorl.

Figure 4 *Lirobarleeia* sp. 1.
Isla de Malpelo, Colombia, "Carl's Corner" [fjord] (03°59.900'N, 81°36.907'W), sloping with turnable scree, shakings, 11 to 24 m (35 to 80 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 12 March 2000. Size: 2.22 mm (SEM).

Figure 5 *Lirobarleeia* sp. 2.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), dead, rock and dead coral shakings, 9 to 38 m (30 to 125 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 3.0 mm (SEM).

Figure 6 ?*Lirobarleeia* sp. 3.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, shakings, 30 to 57 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.98 mm (SEM). Note worn protoconch.

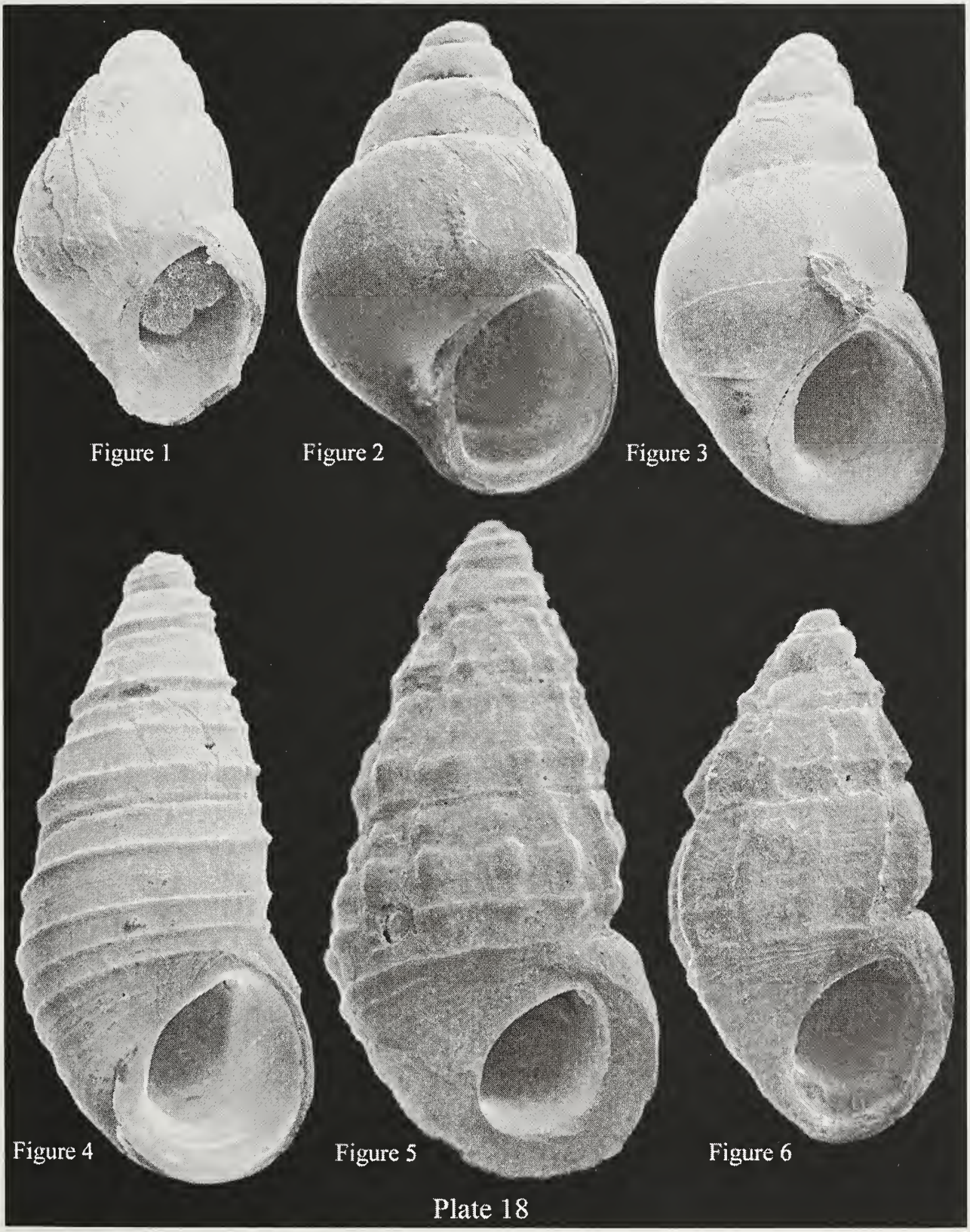

Plate 18

Plate 19

Figure 1 *Elachisina* sp. 1.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), live, rock and dead coral shakings, 12 to 30 m (40 to 100 ft), H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 0.84 mm (SEM). Apertural view showing operculum (diameter, 0.31 mm).

Figure 2 *Solariorbis* sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), rock and dead coral shakings, 9 to 23 m (30 to 75 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.92 mm. (SEM). Debris evident in aperture.

Figure 3 Vitrinellidae sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), rock and dead coral shakings, 9 to 23 m (30 to 75 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.08 mm (SEM). Debris evident in aperture.

Figure 4 *Caecum* (*Micranellum*) cf. *corrugulatum* Carpenter, 1857.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), live, rock and dead coral shakings, 12 to 30 m (40 to 100 ft), H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 0.96 mm (SEM). Adult shell with mucro, debris evident in aperture.

Figure 4a *Caecum* (*Micranellum*) cf. *corrugulatum* Carpenter, 1857.
Juvenile shell with smooth, spiral deciduous protoconch. Size: 0.56 mm (SEM).

Figure 5 *Caecum* (*Micranellum*) sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 12 to 37 m (40 to 120 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 12 March 2000. Size: 1.01 mm (SEM). Specimen broken at both ends. Demarcation line of the juvenile portion visible (second stage).

Figure 6 *Elephantulum* sp. 1.
Isla de Malpelo, Colombia, "Carl's Corner" (03°59.900'N, 81°36.907'W), sloping with turnable scree, shakings, 11 to 24 m (35 to 80 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 12 March 2000. Size: 0.59 mm (SEM). Fragment, note pustules on mucro.

Figure 7 *Fartulum* (*Fartulum*) cf. *glabriforme* (Carpenter, 1857).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.97 mm, diameter 0.45 mm (SEM).

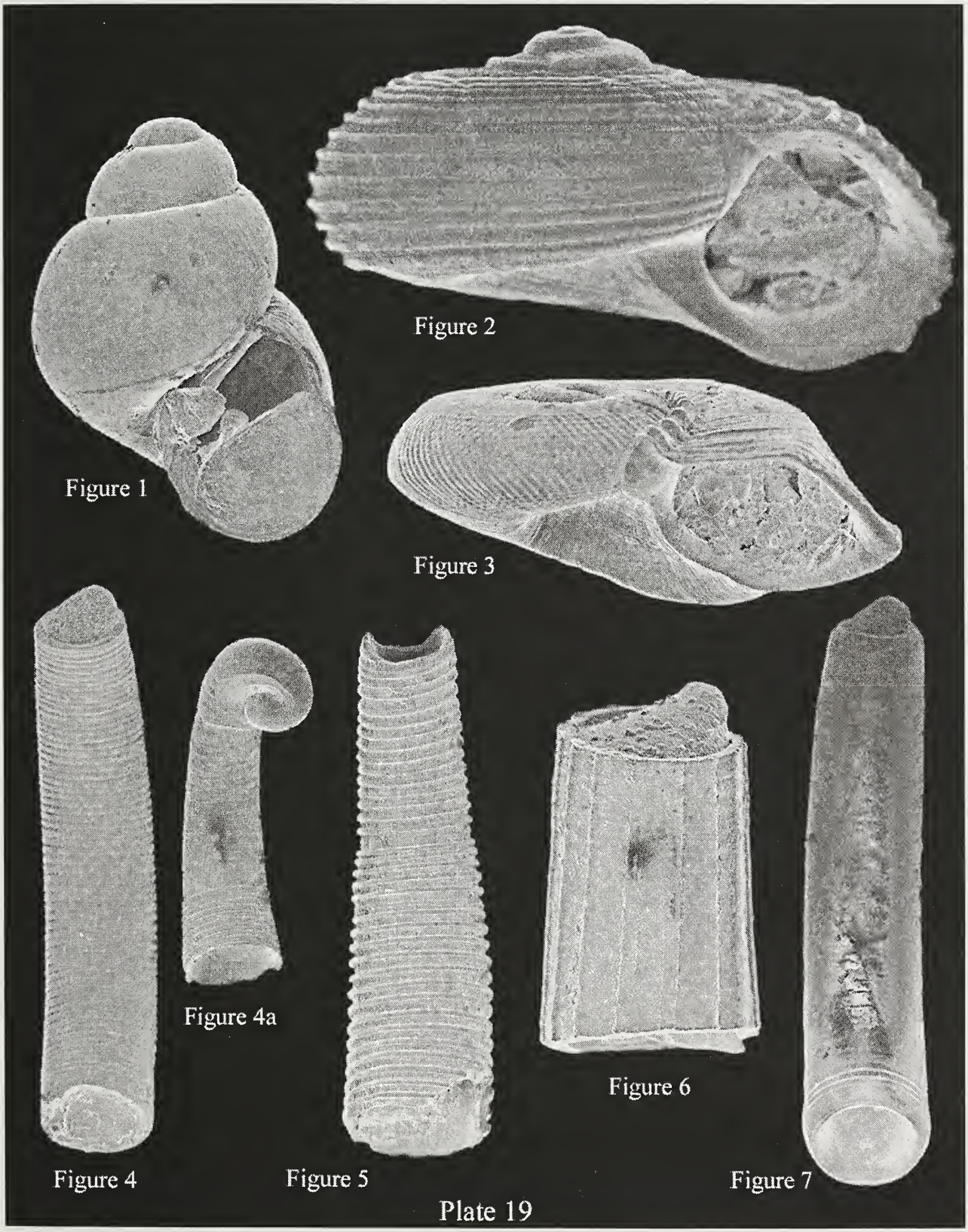
Figure 1
Figure 2
Figure 3
Figure 4
Figure 4a
Figure 5
Figure 6
Figure 7

Plate 19

Plate 20

Figure 1 *Fartulum* sp. 1.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), live, rock and dead coral shakings, 12 to 30 m (40 to 100 ft), H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 1.68 mm L, diameter 0.38 mm (SEM). Adult shell with unusual mucro. Probable new species.

Figure 1a *Fartulum* sp. 1.
Close up showing sculpture of specimen shown in Figure 1 (SEM).

Figure 2 *Fartulum* sp. 2.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), rock and dead coral shakings, 9 to 38 m (30 to 125 ft), H_2O 68-72°F, leg. K.L. Kaiser M/V *The Inzan Tiger*, 15 March 2000. Size: 2.47 mm (SEM). Debris evident in aperture. Probable new species.

Figure 3 *Fartulum* sp. 3.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), fragment, rock and dead coral shakings, 12 to 30 m (40 to 100 ft), H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 0.77 mm (SEM). Note unusual mucro and large diameter (0.38 mm).

Figure 4 *Vermicularia* cf. *frisbeyae* McLean, 1970.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), rock and dead coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 2.28 mm (SEM).

Figure 5 *Vermicularia* cf. *pellucida eburnea* (Reeve, 1842).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), shakings, 15 to 30 m (50 to 100 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 3.9 mm (SEM).

Figure 6 *Modulus* cf. *cerodes* (A. Adams, 1851).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 0.8 mm (SEM).

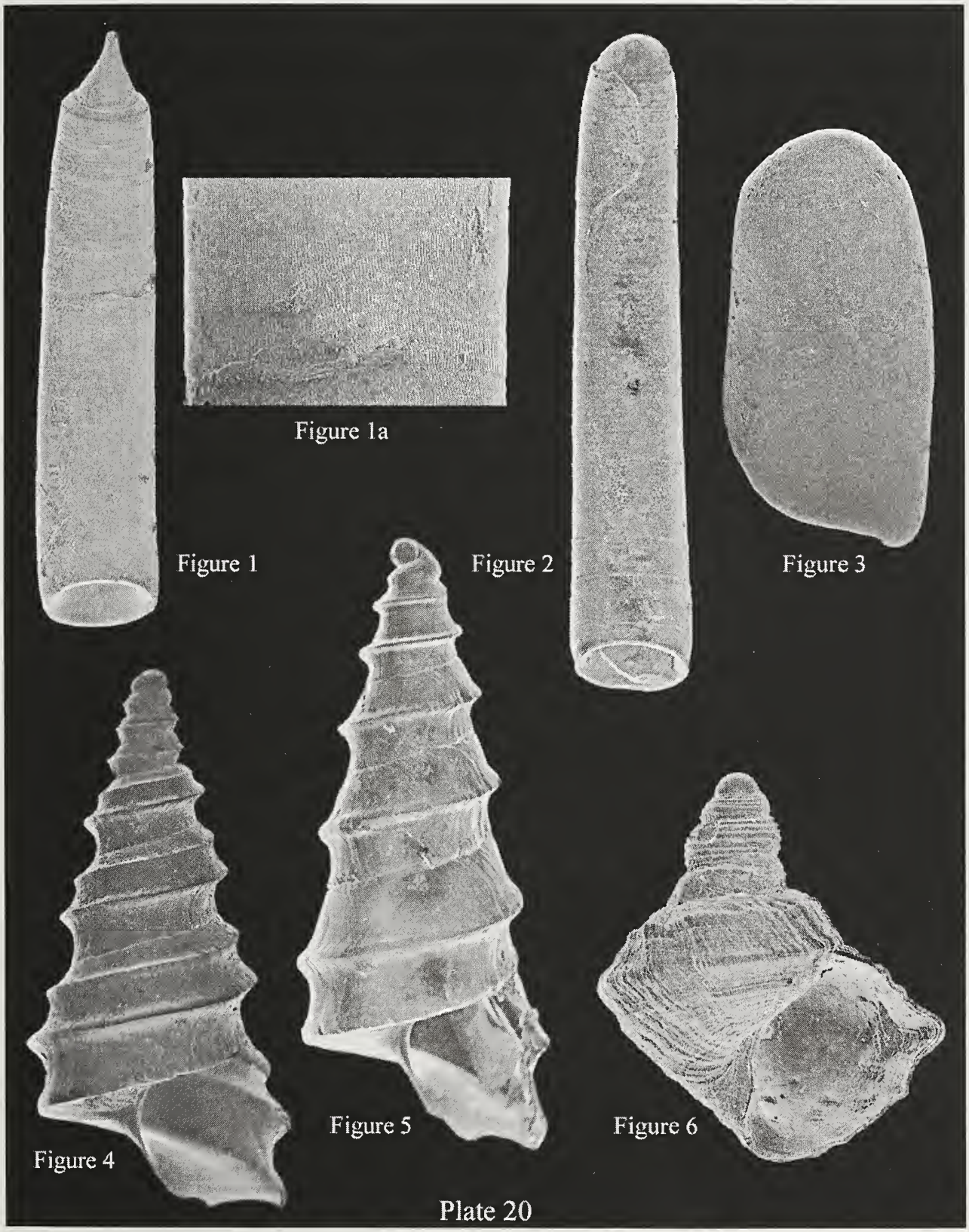
Figure 1a
Figure 1
Figure 2
Figure 3
Figure 4
Figure 5
Figure 6

Plate 20

Plate 21

Figure 1 *Dendropoma* sp.1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), shakings, living on encrusted piece of rubble, 18 to 30 m (60 to 100 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: >6.0 mm, length of shell in coiled position.

Figure 2 Vermetidae sp.1.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), turnable scree and dead *Pavona* sp. in sand, living on *Hipponix* sp., 9 to 38 m (30 to 125 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 7.2 mm, diameter of coiled shell.

Figure 3 Vermetidae sp.2.
Isla de Malpelo, Colombia, "Widowmaker", South Rocks (03°59.816'N, 81°36.906'W), living in clusters of dead barnacles, shakings, 11 to 24 m (35 to 78 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 3.9 mm, coiled position.

Figure 4 Vermetidae sp.3.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), solitary specimen on dead *Hyotissa* valve, 15 to 28 m (50 to 90 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 47.5 mm, length of shell in coiled position.

Figure 5 *Fossarus* cf. *angulatus* Carpenter, 1857.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), rock and dead coral shakings, 12 to 30 m (40 to 100 ft), H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 2.29 mm (SEM).

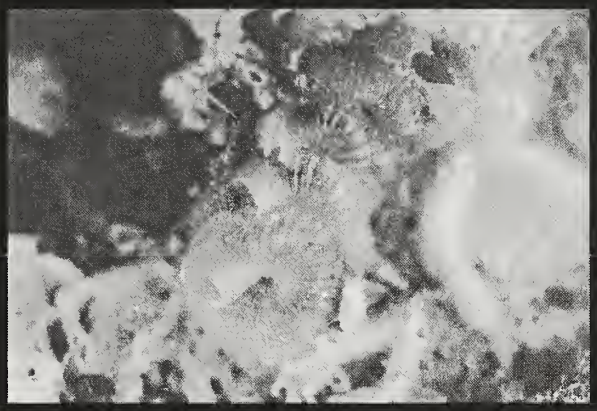

Figure 1

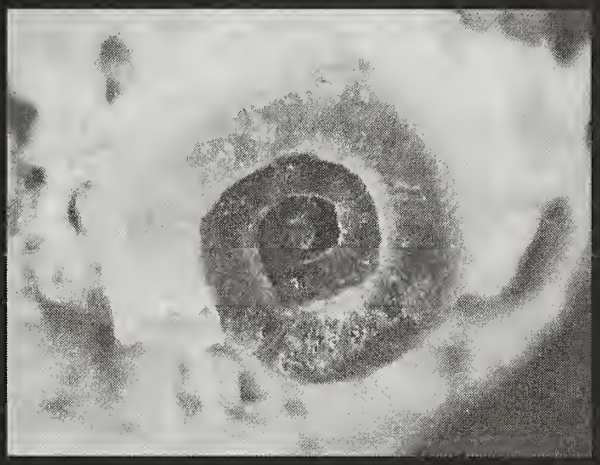

Figure 2

Figure 3

Figure 4

Figure 5

Plate 21

Plate 22

Figures 1, 1a *Epitonium* (*Asperiscala*) *acapulcanum* Dall, 1917.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, rock, barnacle and gorgonian shakings, SCUBA, 40 to 56 m (130 to 185 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.9 mm (SEM).

Figures 2, 2a *Epitonium* sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), turnable scree and dead *Pavona* sp. in sand, shakings, 9 to 38 m (30 to 125 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 0.89 mm (SEM). Debris evident in aperture.

Figures 3, 3a *Epitonium* sp. 2.
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), live, rock and dead coral shakings, 12 to 23 m (40 to 77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 1.21 mm (SEM). Operculum showing in aperture.

Figures 4, 4a *Opalia paulula* DuShane, 1974.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), live, rock and dead coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 2.84 mm (SEM).

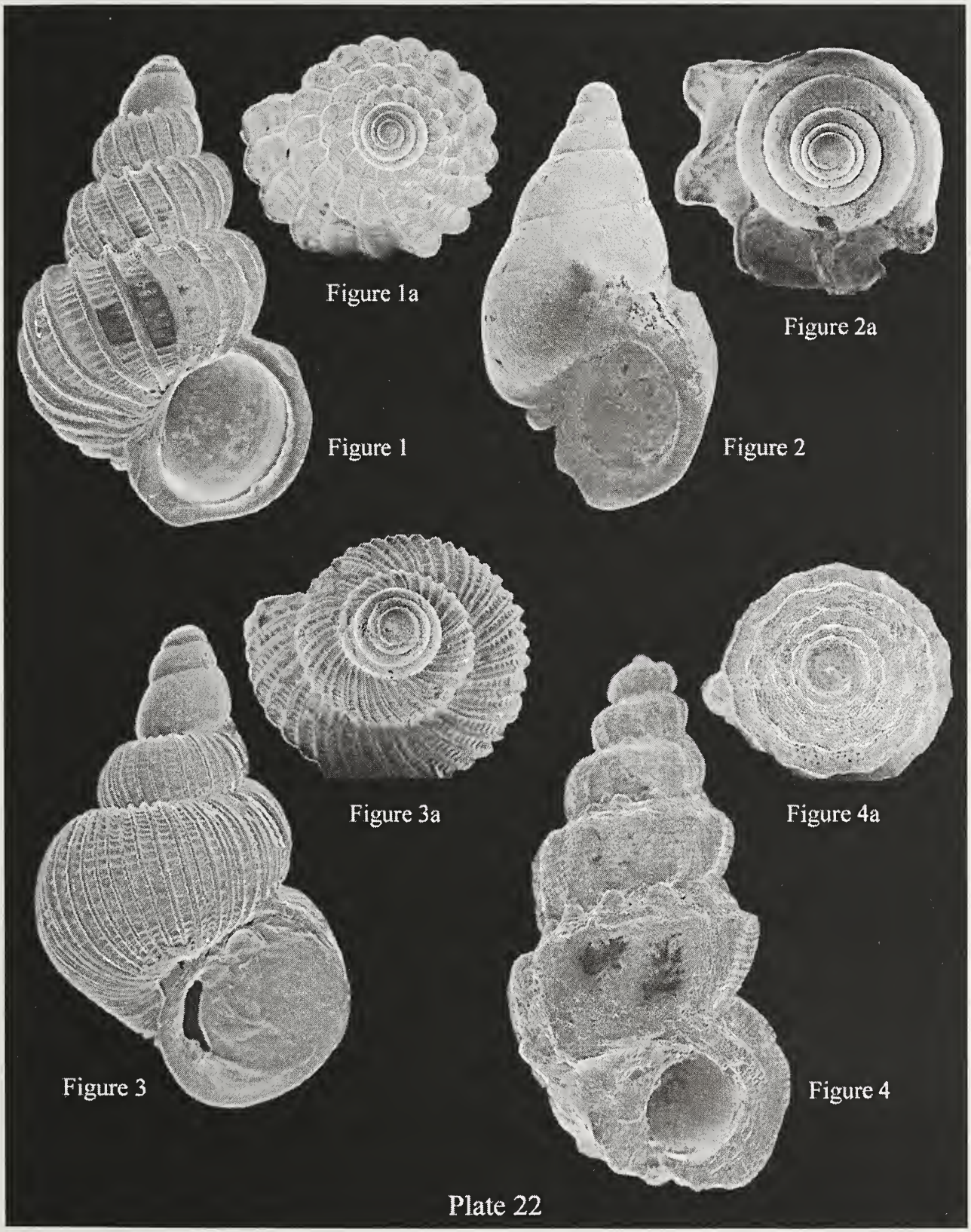
Figure 1a
Figure 2a
Figure 1
Figure 2
Figure 3a
Figure 4a
Figure 3
Figure 4
Plate 22

Plate 23

Figure 1 *Janthina* cf. *prolongata* Blainville, 1822.
Live, floating at surface in large numbers on bubble rafts w/ egg capsules, (04°51.884'N, 81°54.790'W), leg. C.W. Bryce and K.L. Kaiser, M/V *The Inzan Tiger*, 15 March 2000. Size: 7.4 mm. Animal showing in aperture.

Figure 2 *Melanella* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), living, on host holothurian sp., 18 to 30 m (60 to 100 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 7.0 mm.

Figure 3 *Melanella* sp. 2.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), sand and rubble, *Ostrea* shakings, live with operculum, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 4.5 mm.

Figure 4 *Melanella* sp. 3.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, shakings, 24 to 44 m (80 to 144 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 6.3 mm. Animal has orange spots visible through translucent shell.

Figure 5 *Hemiliostraca* sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, sand and rubble, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 1.83 mm (SEM). Translucent with nondistinct, tan color spiral lines.

Figure 6 *Hemiliostraca* sp. 2.
Isla de Malpelo, Colombia, "Widow Maker", South Rocks (03°59.816'N, 81°36.904'W), live, rock and dead coral shakings, 15 to 30 m (50 to 100 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26-27 March 1998. Size: 3.3 mm (SEM). Debris evident in aperture. Translucent with two tan color spiral lines, protoconch larger than in *Hemiliostraca* sp. 1.

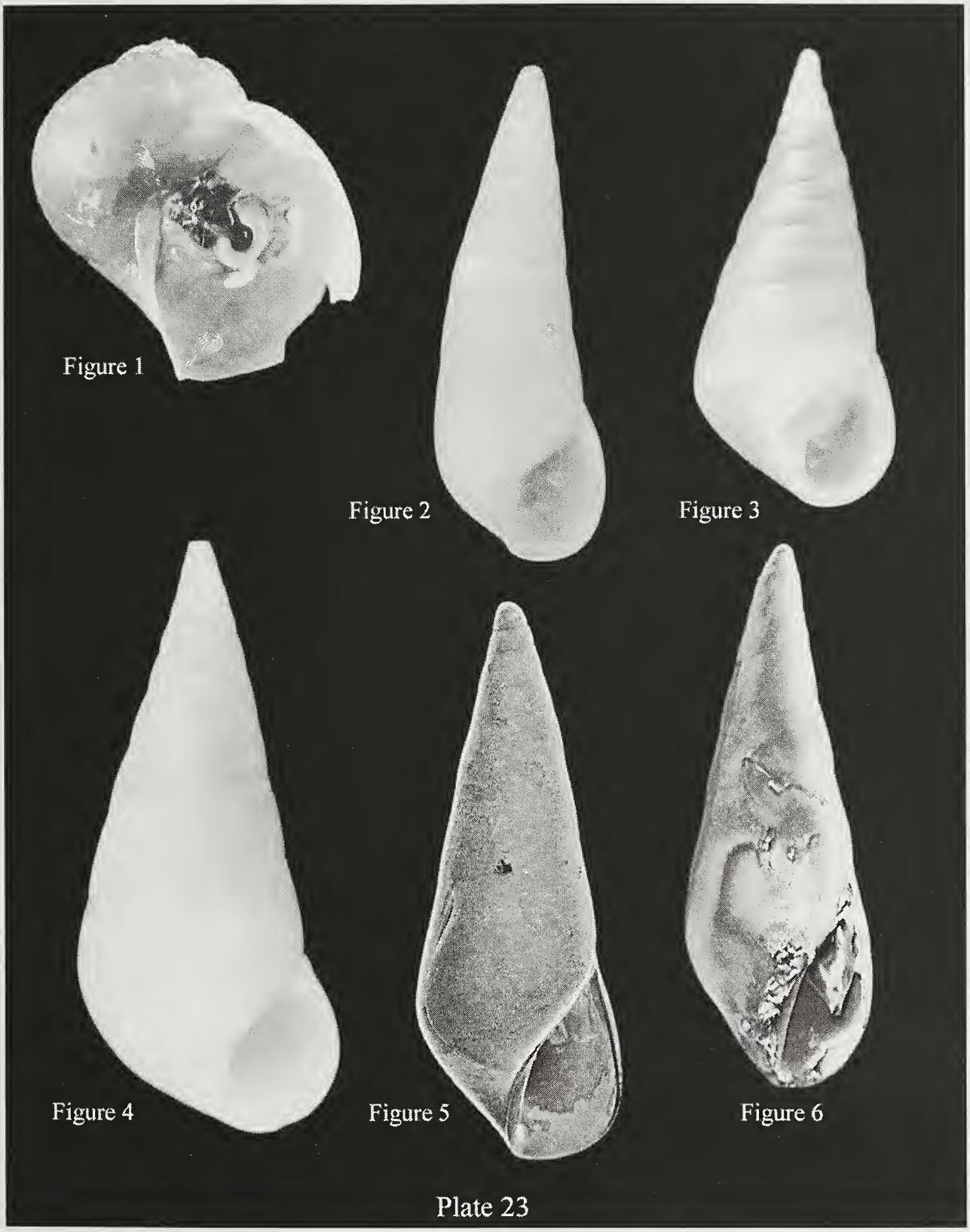

Plate 23

Plate 24

Figure 1 *Melanella* sp. 4.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, gorgonian shakings on vertical wall, 24 to 34 m (80 to 113 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 1.67 mm (SEM).

Figure 2 *Sabinella* cf. *shaskyi* Warén, 1992.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), living, on host urchin *Eucidaris thourasi* in spine gall, 18 m (60 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.7 mm (SEM).

Figure 3 *Sabinella* sp. 1.
Isla de Malpelo, Colombia, "Little Bob", North Rocks (04°00.20'N, 81°36.10'W), dead, turnable scree, shakings, 12 to 27 m (40 to 89 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 12 March 2000. Size: 1.63 mm (SEM).

Figure 4 Eulimidae sp. 1.
Isla de Malpelo, Colombia, "Off and On Bay" left of cave (04°00.136'N, 81°36.639'W), predawn dive, live, sand and rubble, shakings, 35 m (115 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 1.72 mm (SEM). Shell transparent, debris evident in aperture.

Figure 4a Eulimidae sp. 1.
Protoconch of specimen shown in Figure 4.

Figure 5 Eulimidae sp. 2.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.13'N, 81°36.73'W), live, on underside of turnable rock, 15 to 26 m (50 to 85 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 2.07 mm (SEM).

Figure 5a Eulimidae sp. 2.
Protoconch of specimen shown in Figure 5.

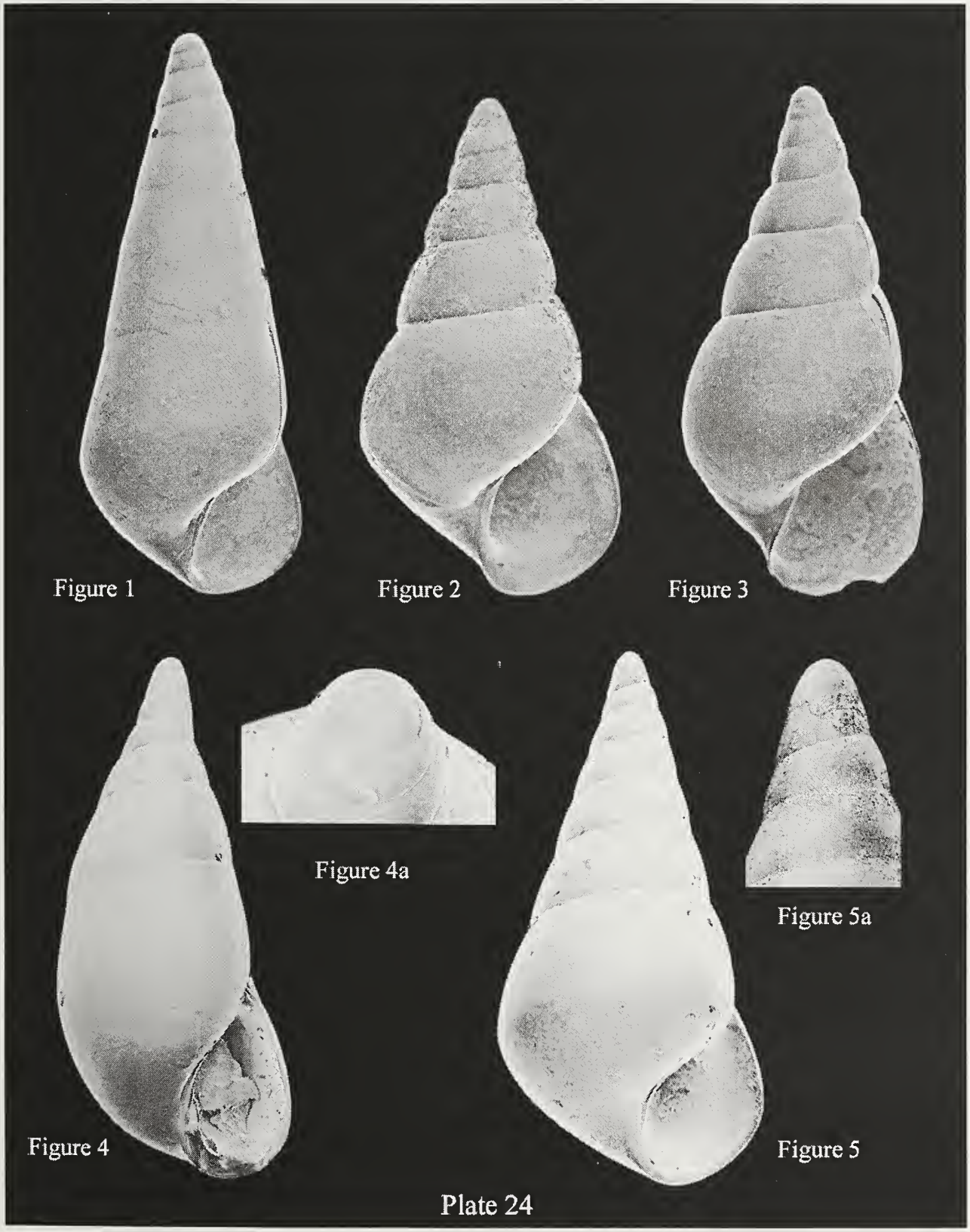
Figure 1
Figure 2
Figure 3
Figure 4a
Figure 5a
Figure 4
Figure 5

Plate 24

Plate 25

Figure 1 Eulimidae sp. 3.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, rock, barnacle and gorgonian shakings, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.9 mm (SEM).

Figure 2 Eulimidae sp. 4.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 2.02 mm (SEM).

Figure 3 Eulimidae sp. 5.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 1.15 mm (SEM). Debris evident in aperture.

Figure 4 *Hipponix antiquatus panamensis* C.B. Adams, 1852.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.143'N, 81°36.667'W), live, under rock, 18 to 31 m (60 to 103 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 28 March 1998. Size: 15.6 mm.

Figure 5 *Hipponix grayanus* Menke, 1853.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.115'N, 81°36.651'W), live, on dead *Ostrea* sp., 12 to 15 m (40 to 50 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 7.0 mm.

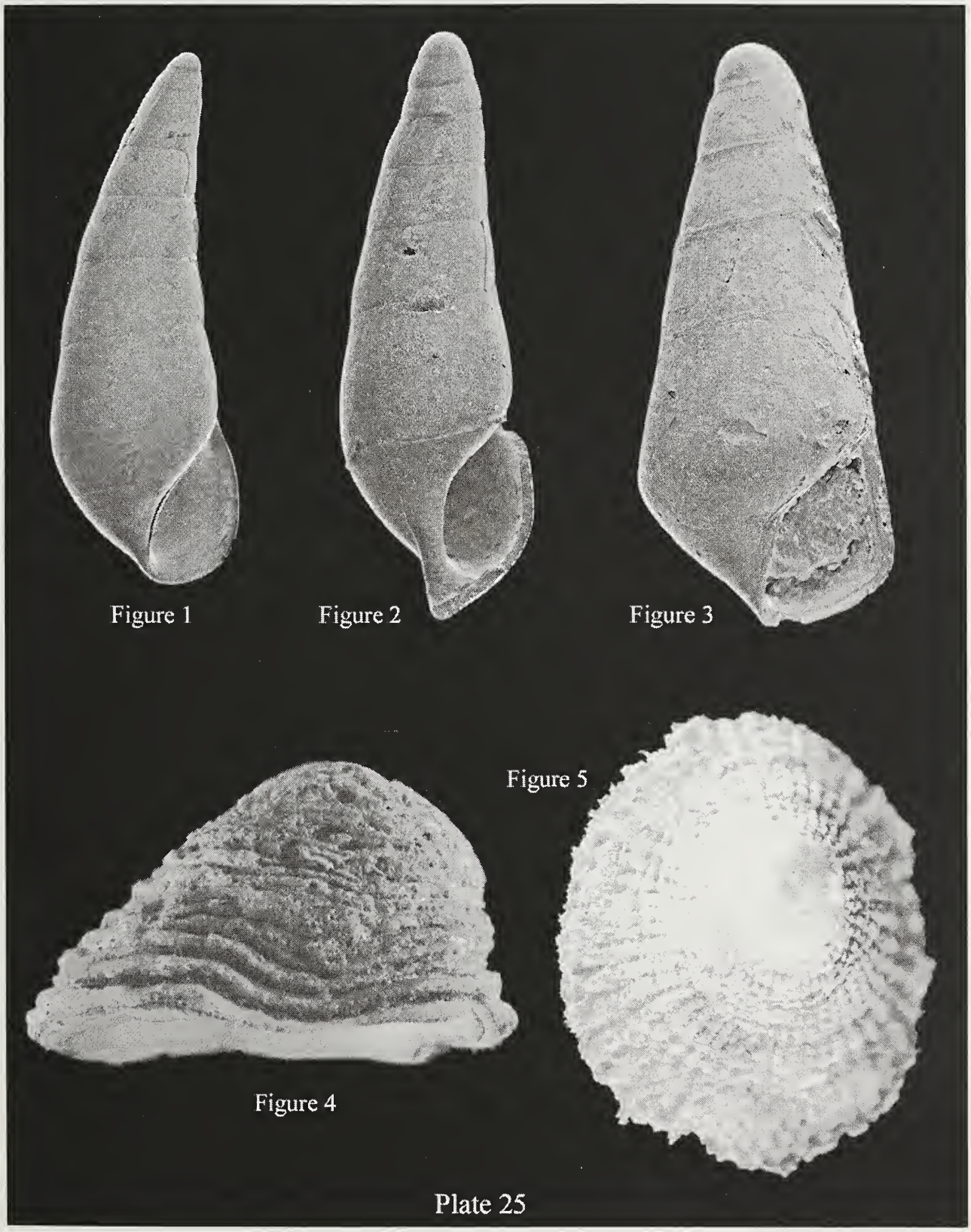

Plate 25

Plate 26

Figure 1 *Pilosabia* cf. *planatus* Carpenter, 1857.
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), dead, rock and coral shakings, 18 to 29 m (60 to 97 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 6.2 mm.

Figure 2 ?Hipponicidae sp. 1.
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), live, attached to underside of turnable rock, 12 to 23 m (40 to 77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 8.9 mm. Horseshoe shaped internal muscle scar.

Figure 2a ?Hipponicidae sp. 1.
Juvenile specimen showing protoconch and early sculpture. Size: 2.28 mm (SEM).

Figures 3, 3a ?Hipponicidae sp. 2.
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), rock and coral shakings, 18 to 29 m (60 to 97 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 2.76 mm (SEM).

Figures 4, 4a ?Hipponicidae sp. 3.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), rock and coral shakings, 35 m (115 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 1.24 mm (SEM).

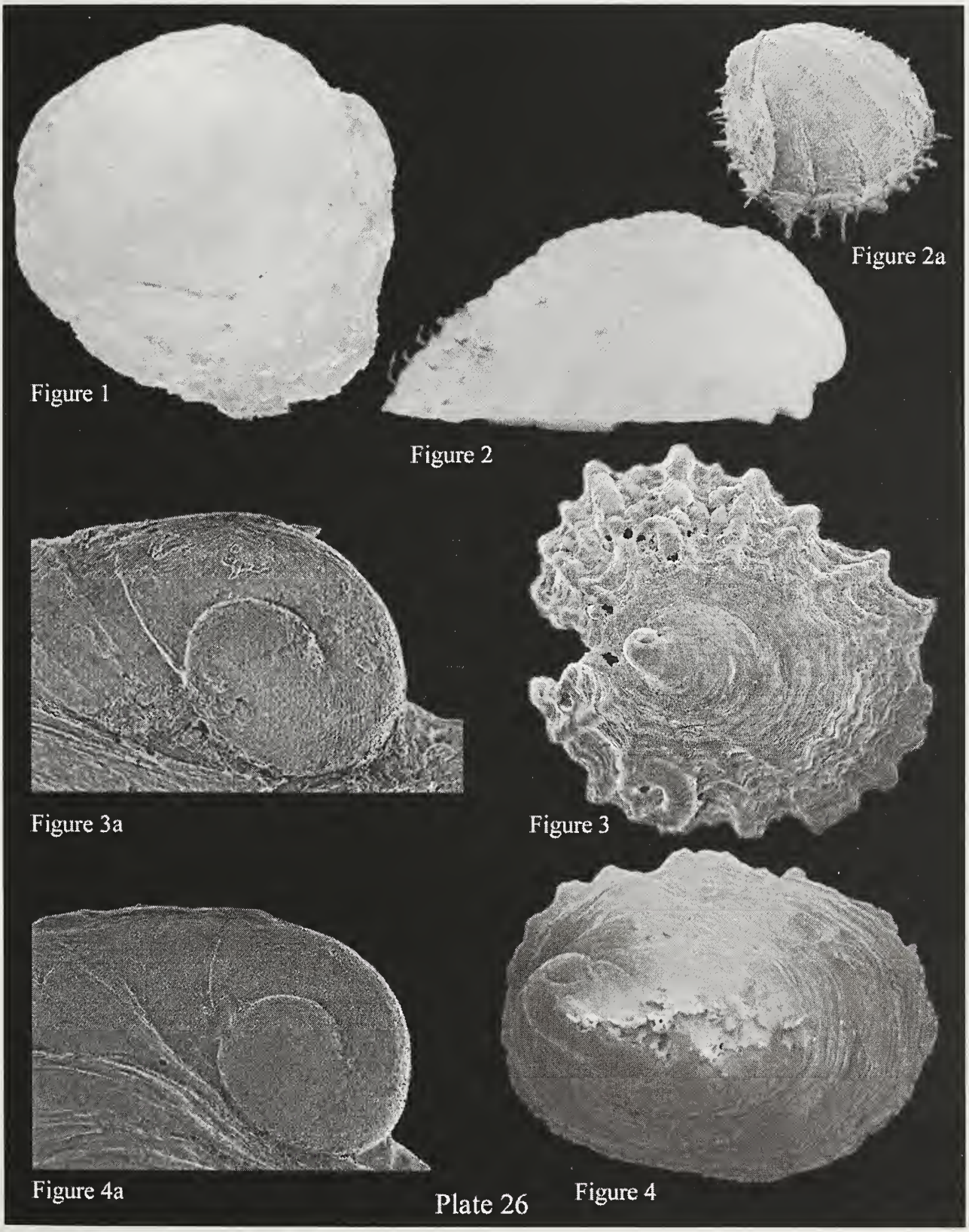

Figure 1

Figure 2

Figure 2a

Figure 3a

Figure 3

Figure 4a

Figure 4

Plate 26

Plate 27

Figure 1 *Vanikoro aperta* (Carpenter, 1864).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), gorgonian shakings on vertical wall, 24 to 34 m (80 to 113 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 2.05 mm (SEM).

Figure 2 *Vanikoro galapagana* Hertlein & Strong, 1959.
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), under turnable rock, 12 to 23 m (40 to 77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 11.8 mm.

Figure 3 *Cheilea cepacea* (Broderip, 1834).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.388'N, 81°36.209'W), turnable rock on scree slope, 7 to 20 m (25 to 65 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 14.1 mm.

Figure 4 *Cheilea corrugata* (Broderip, 1834).
Isla de Malpelo, Colombia, "Bombs Away" (03°59.922'N, 81°36.502'W), sand and rubble, 24 to 37 m (80 to 120 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 42.0 mm.

Figure 5 *Crepidula aculeata* (Gmelin, 1791).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.115'N, 81°36.651'W), under rock in sand, 12 to 15 m (40 to 50 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 13.9 mm.

Figure 6 *Crepidula* sp.1.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.160'N, 81°36.745'W), on sand under turnable rock, 12 to 19 m (40 to 64 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 13.5 mm. Note pustules on broken septum.

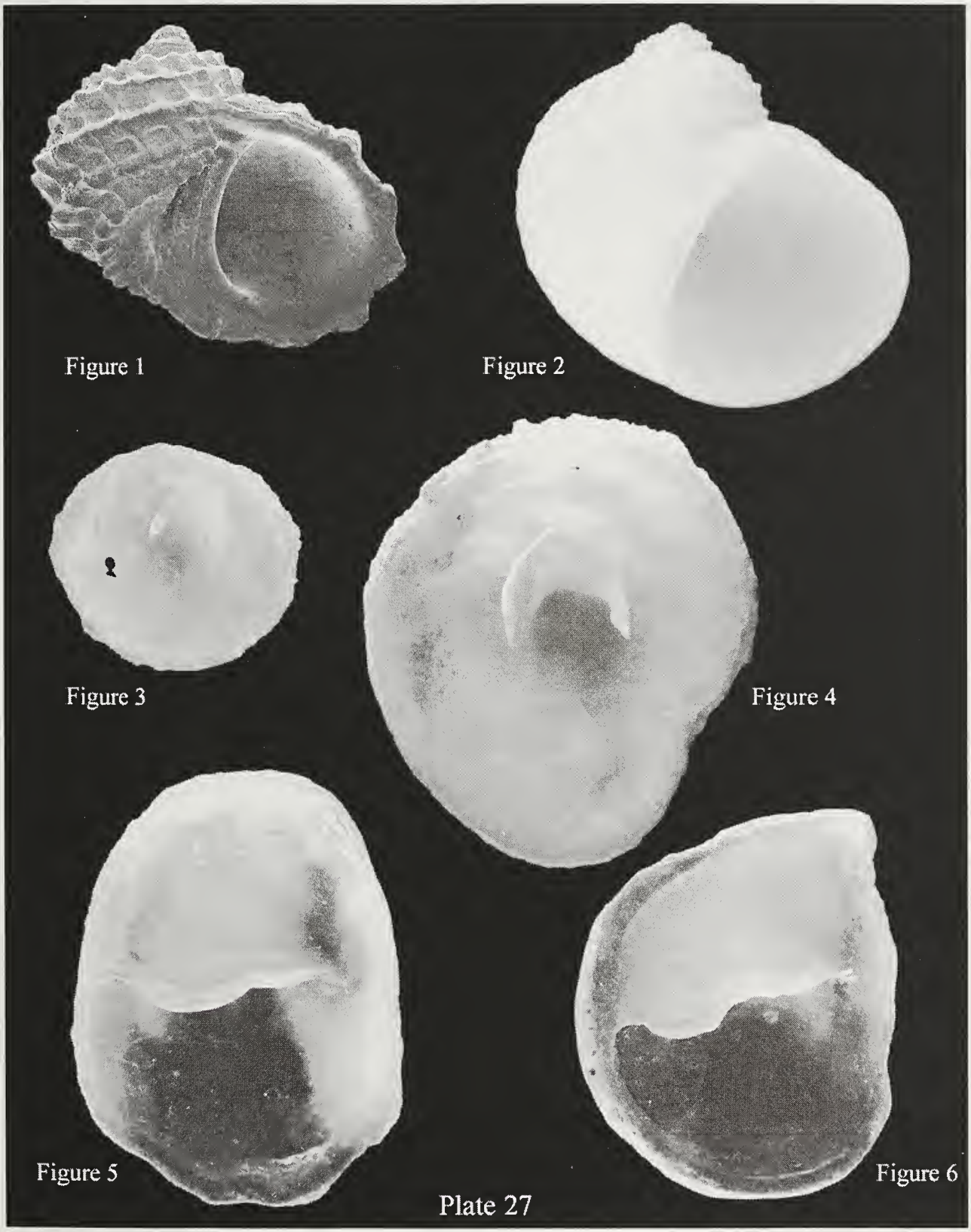

Plate 27

Plate 28

Figure 1 cf. *Carinaria japonica* Okutani, 1955.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 0.84 mm, larval shell (SEM). See Seapy & Thiriot-Quiévereux (1994).

Figure 2 Naticidae sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.8 mm (SEM).

Figure 3 cf. Naticidae sp. 2.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 0.69 mm (SEM). Operculum showing in aperture.

Figure 4 cf. Naticidae sp. 3.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.3 mm (SEM).

Figure 5 cf. Naticidae sp. 4.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.08 mm (SEM).

Figure 6 *Hespererato scabriuscula* (Sowerby, 1832).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.143'N, 81°36.667'W), under rock, 18 to 31 m (60 to 103 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 28 March 1998. Size: 6.5 mm. Note minute granules on surface, a specific character.

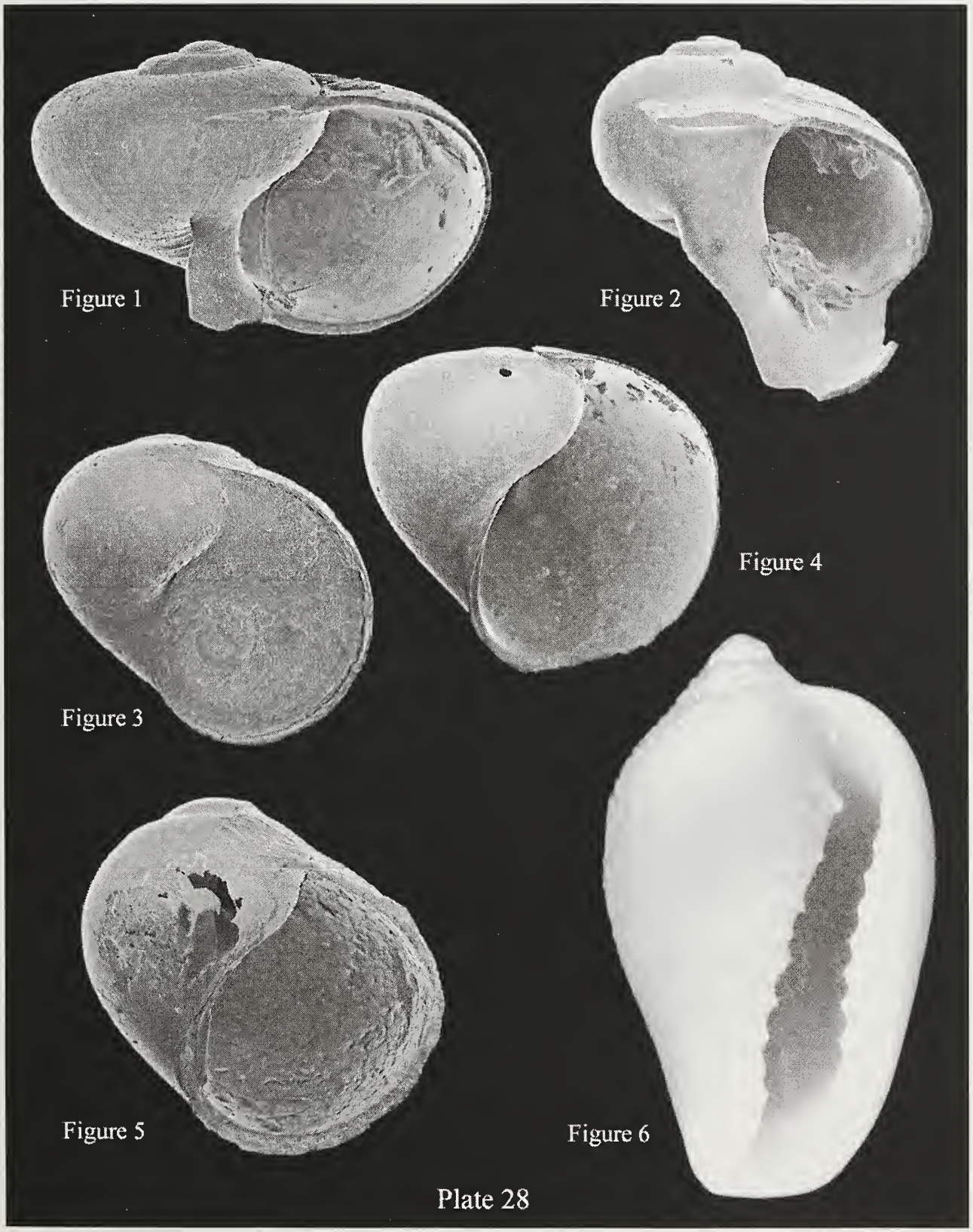

Plate 28

Plate 29

Figure 1 *Blasicrura alisonae* (Burgess, 1983).
Isla de Malpelo, Colombia, "Hammerwall" north end (04°00.388'N, 81°36.209'W), living in dead *Pocillopora* sp. head, 18 m (60 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 34.0 mm.

Figure 2 *Luria isabellamexicana* (Stearns, 1893).
Isla de Malpelo, Colombia, "Off and On Bay"south point (03°59.930'N, 81°36.907'W), live on underside of turnable scree, 24 m (80 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 28 March 1998. Size: 40.7 mm.

Figure 3 *Macrocypraea cervinetta* (Kiener, 1843).
Isla de Malpelo, Colombia, "Little Bob", North Rocks (04°00.20'N, 81°36.10'W), dead, turnable scree, 12 to 27 m (40 to 89 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 12 March 2000. Size: 92.5 mm.

Figure 4 *Mauritia arabicula* (Lamarck, 1811).
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), dead, under rock, 27 m (90 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 28.2 mm.

Figure 5 *Talparia talpa* (Linnaeus, 1758).
Isla de Malpelo, Colombia, North Rocks (03°59.226'N, 81°36.247'W), sloping w/ turnable scree, sand chute, 18 to 24 m (60 to 80 ft), leg. H. Buchbinder, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 65.0 mm.

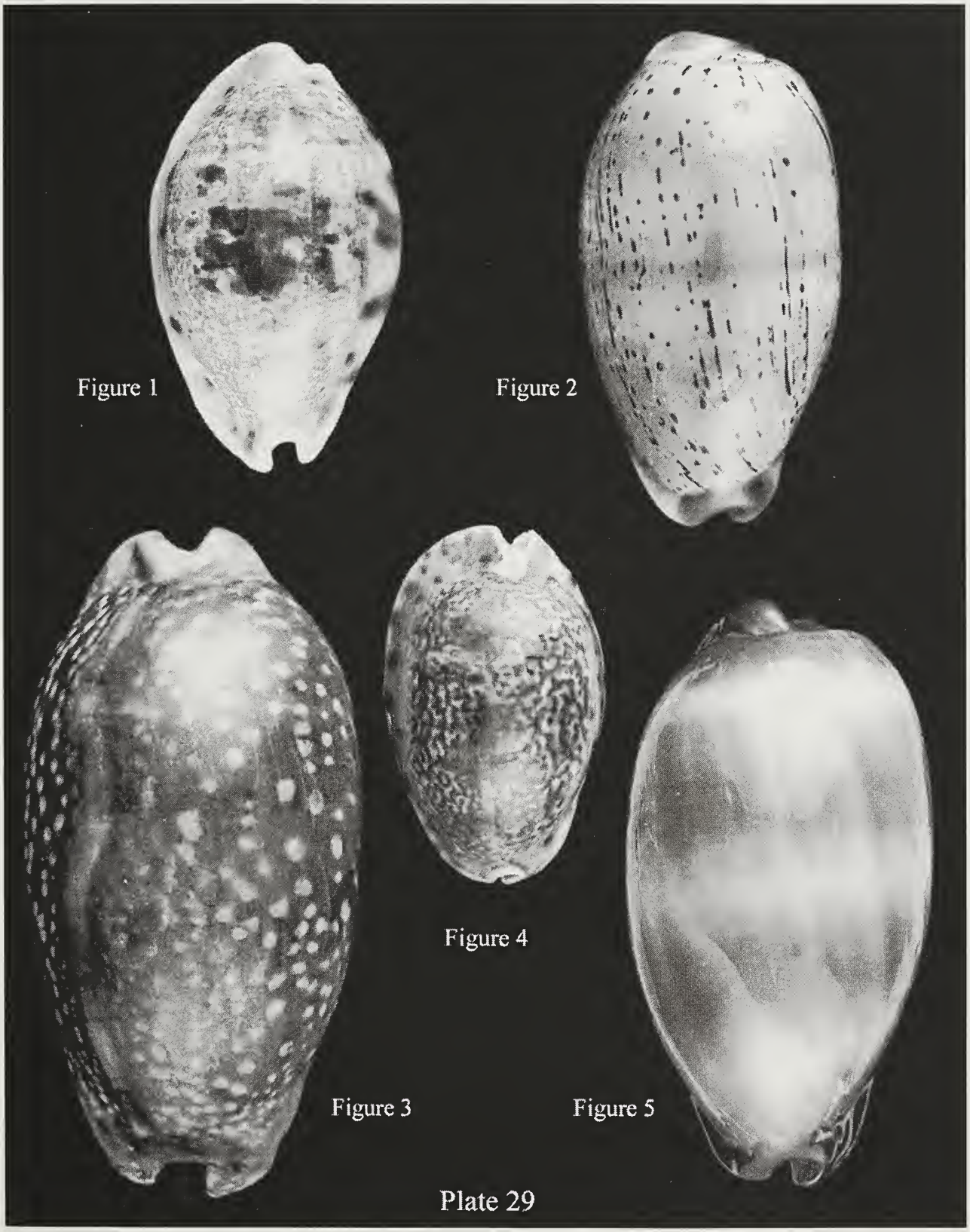

Plate 29

Plate 30

Figure 1 *Neosimnia aequalis* (Sowerby, 1832).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, on dark purple gorgonian sp. on vertical wall, shakings, 24 to 34 m (80 to 113 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 8.1 mm.

Figure 2 *Neosimnia rufa* (Sowerby, 1832).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, on pink gorgonian sp., 40 to 56 m (130 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 18.4 mm. Soft parts obscure specific character of the ridge along length of columella.

Figure 3 *Malea ringens* (Swainson, 1822).
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), fragment, turnable scree and dead *Pavona* sp. in sand, 9 to 23 m (30 to 75 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 175.0 mm.

Figure 4 *Bursa* (*Colubrellina*) *corrugata corrugata* (Perry, 1811).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.13'N, 81°36.73'W), live, attached to underside of turnable rock, 15 to 26 m (50 to 85 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 47.1 mm.

Figure 5 *Bursa* (*Colubrellina*) *granularis* (Röding, 1798).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.388'N, 81°36.209'W), living on underside of rock, 8 to 20 m (25 to 65 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 45.3 mm. Operculum showing in aperture.

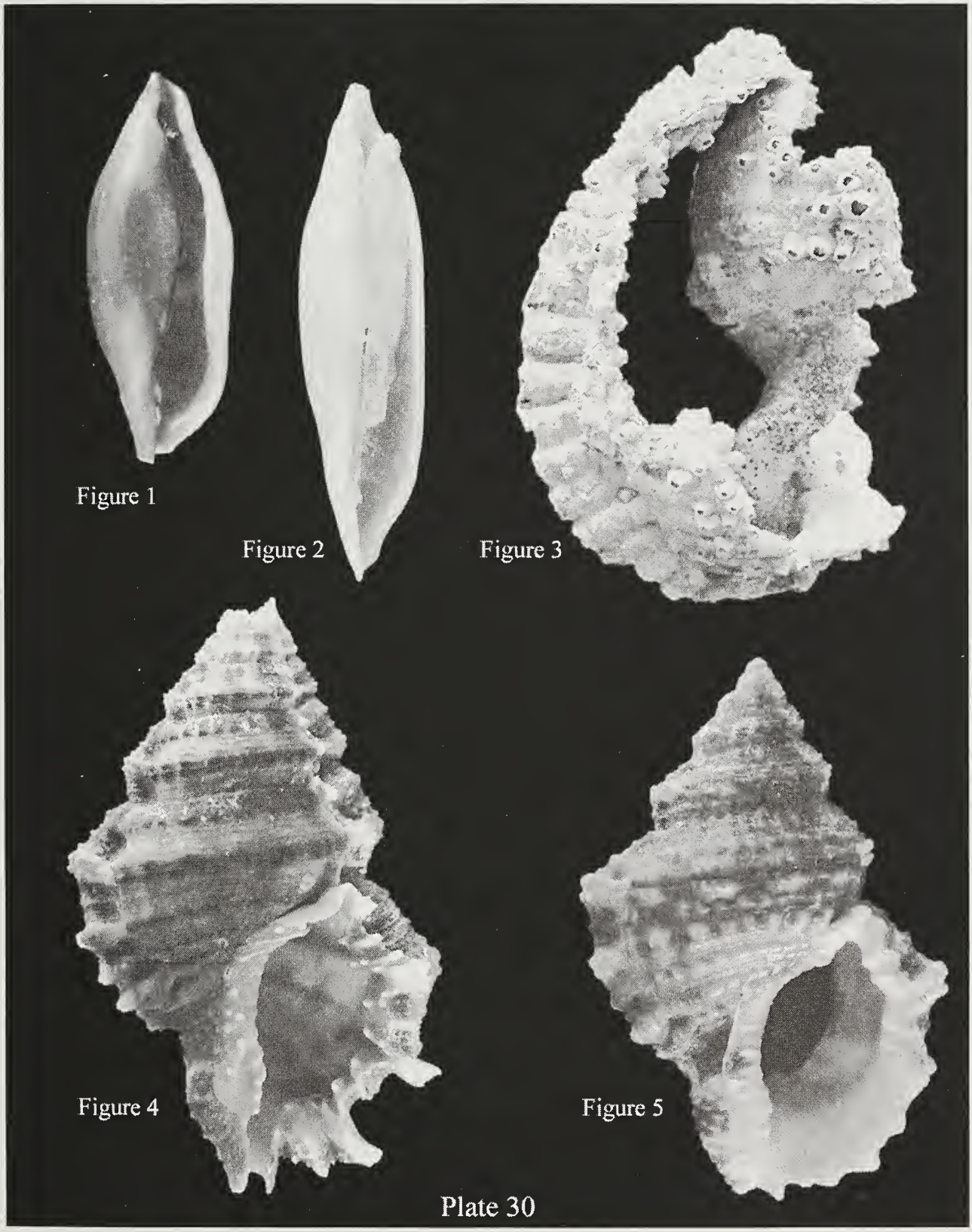

Plate 30

Plate 31

Figures 1, 1a *Cerithiopsis* sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), live, rock and dead coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 3.17 mm (SEM).

Figure 2 *Cerithiopsis* sp. 2.
Isla de Malpelo, Colombia, "Widow Maker", South Rocks (03°59.816'N, 81°36.904'W), live, rock and dead coral shakings, 15 to 30 m (50 to 100 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26-27 March 1998. Size: 1.9 mm (missing protoconch), (SEM). Debris evident in aperture.

Figures 2a, 2b *Cerithiopsis* sp. 2.
Isla de Malpelo, Colombia, "Widow Maker", South Rocks (03°59.816'N, 81°36.904'W), live, rock and dead coral shakings, 15 to 30 m (50 to 100 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26-27 March 1998. Size: 1.74 mm (immature specimen), (SEM).

Figures 3, 3a *Cerithiopsis* sp. 3.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), rock, barnacle and gorgonian sp. shakings, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 2.9 mm (SEM).

Figures 4, 4a *Cerithiopsis* sp. 4.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, rock, barnacle and gorgonian sp. shakings, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.66 mm (SEM).

Figures 5, 5a *Cerithiopsis* sp. 5.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, rock, barnacle and gorgonian sp. shakings, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.92 mm (SEM).

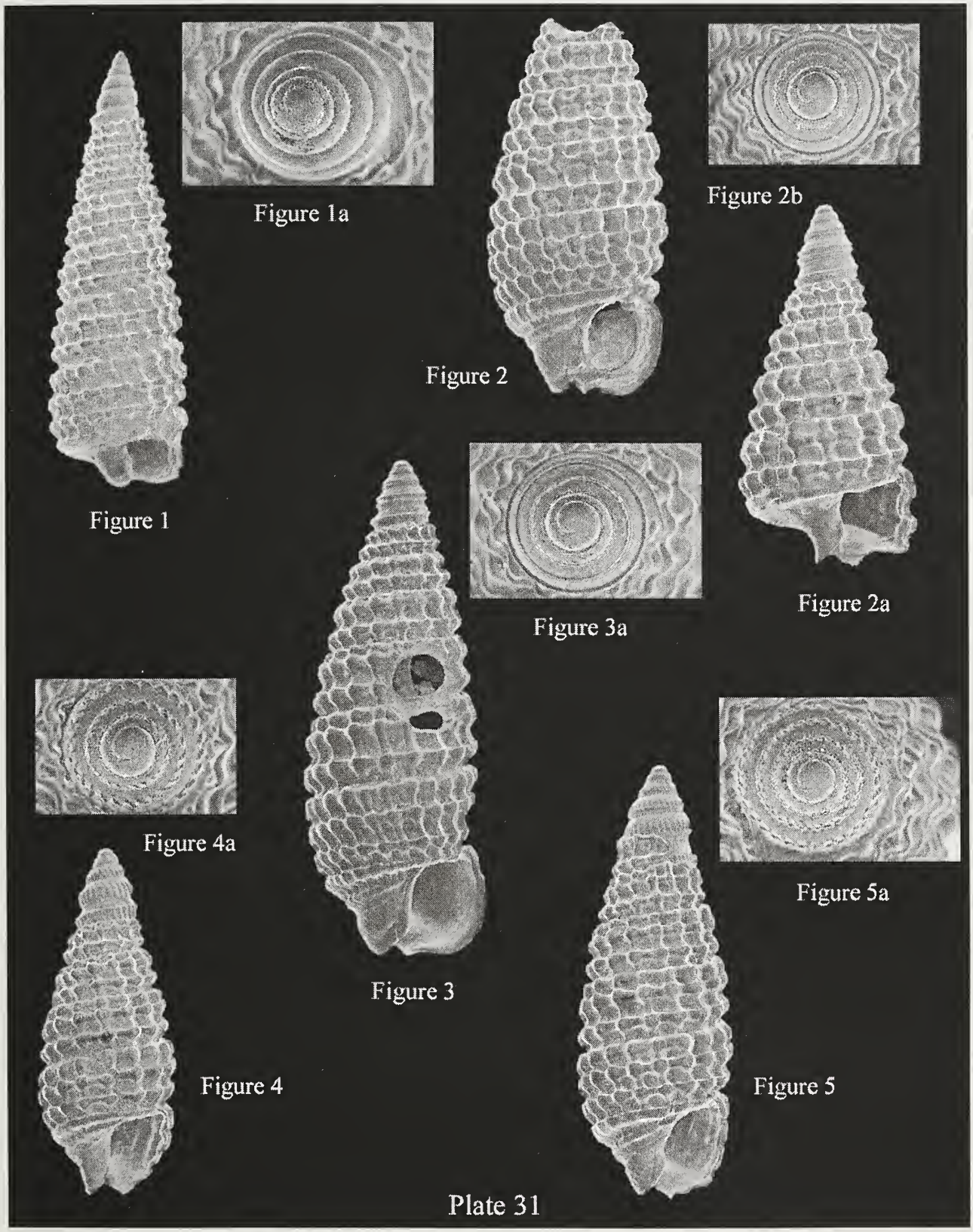
Figure 1a
Figure 2b
Figure 2
Figure 1
Figure 2a
Figure 3a
Figure 4a
Figure 5a
Figure 3
Figure 4
Figure 5
Plate 31

Plate 32

Figures 1, 1a *Cerithiopsis* sp. 6.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), rock, barnacle and gorgonian sp. shakings, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.83 mm (SEM).

Figures 2, 2a *Cerithiopsis* sp. 7.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 2.22 mm (SEM).

Figures 3, 3a *Cerithiopsis* sp. 8.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, rock, barnacle and gorgonian sp. shakings, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.27 mm (SEM).

Figures 4, 4a *Seila assimilata* (C.B. Adams, 1852).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), rock and coral shakings, predawn dive, 35 m (115 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 3.07 mm (SEM).

Figure 5 *Seila kanoni* (de Folin, 1867).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), barnacle shakings, 9 to 18 m (30 to 58 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 9 March 2000. Size: 2.3 mm (SEM).

Figure 6 *Seila pulmoensis* DuShane & Draper, 1975.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), rock, barnacle and gorgonian sp. shakings, 40 to 56 m (130 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 3.75 mm (SEM).

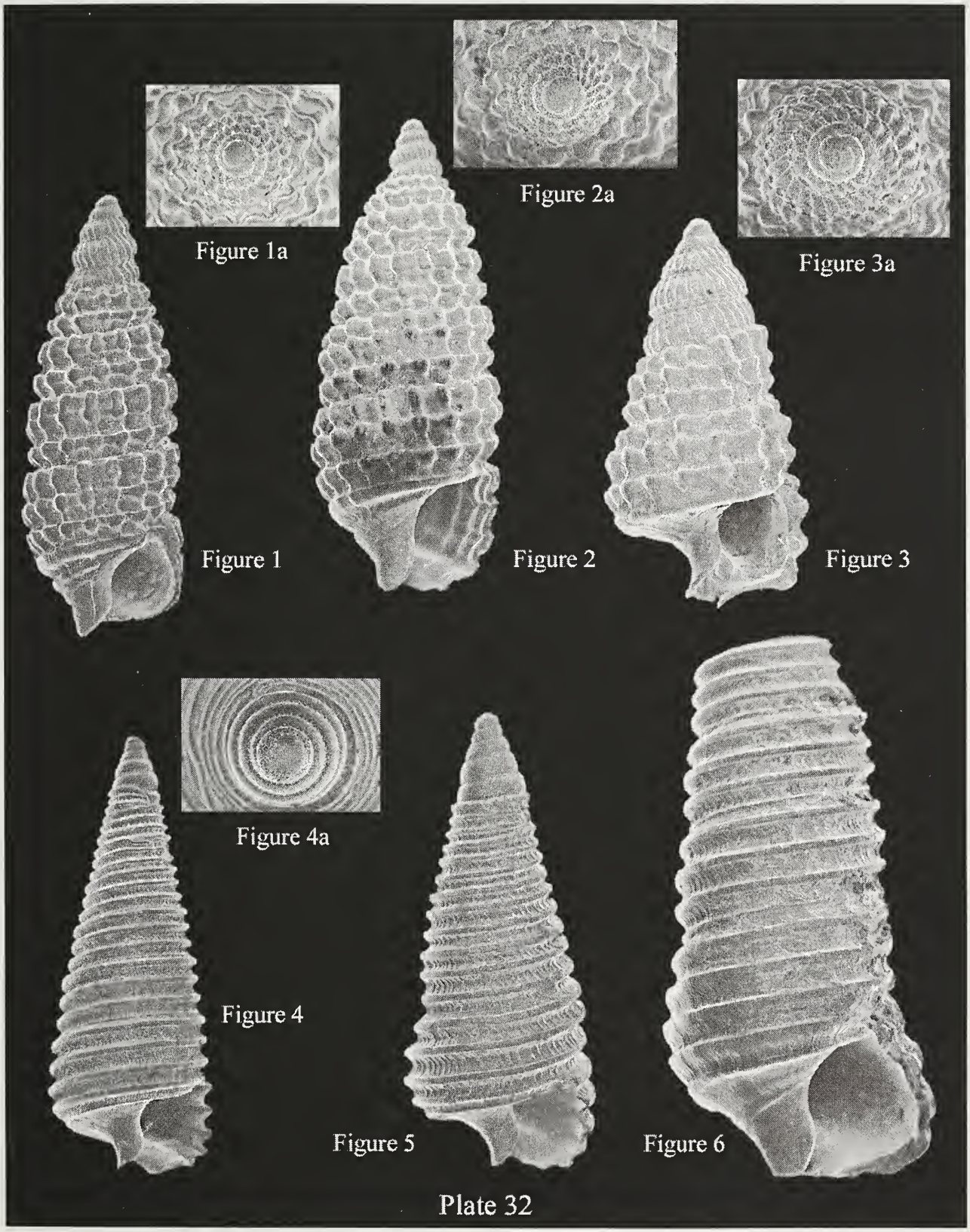
Figure 1a
Figure 2a
Figure 3a
Figure 1
Figure 2
Figure 3
Figure 4a
Figure 4
Figure 5
Figure 6
Plate 32

Plate 33

Figures 1, 1a *Triphora dalli* Bartsch, 1907.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), H_2O, 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 4.5 mm (SEM).

Figures 2, 2a *Triphora* sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), turnable scree and dead *Pavona* sp. in sand, shakings, 9 to 38 m (30 to 125 ft), H_2O, 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 3.38 mm (SEM).

Figures 3, 3a *Triphora* sp. 2.
Isla de Malpelo, Colombia, "Widowmaker", South Rocks (03°59.816'N, 81°36.906'W), dead in clusters of dead barnacles, shakings, 11 to 24 m (35 to 78 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 3.10 mm (SEM).

Figures 4, 4a *Triphora* sp. 3.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), turnable scree and dead *Pavona* sp. in sand, shakings, 9 to 38 m (30 to 125 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 2.92 mm (SEM).

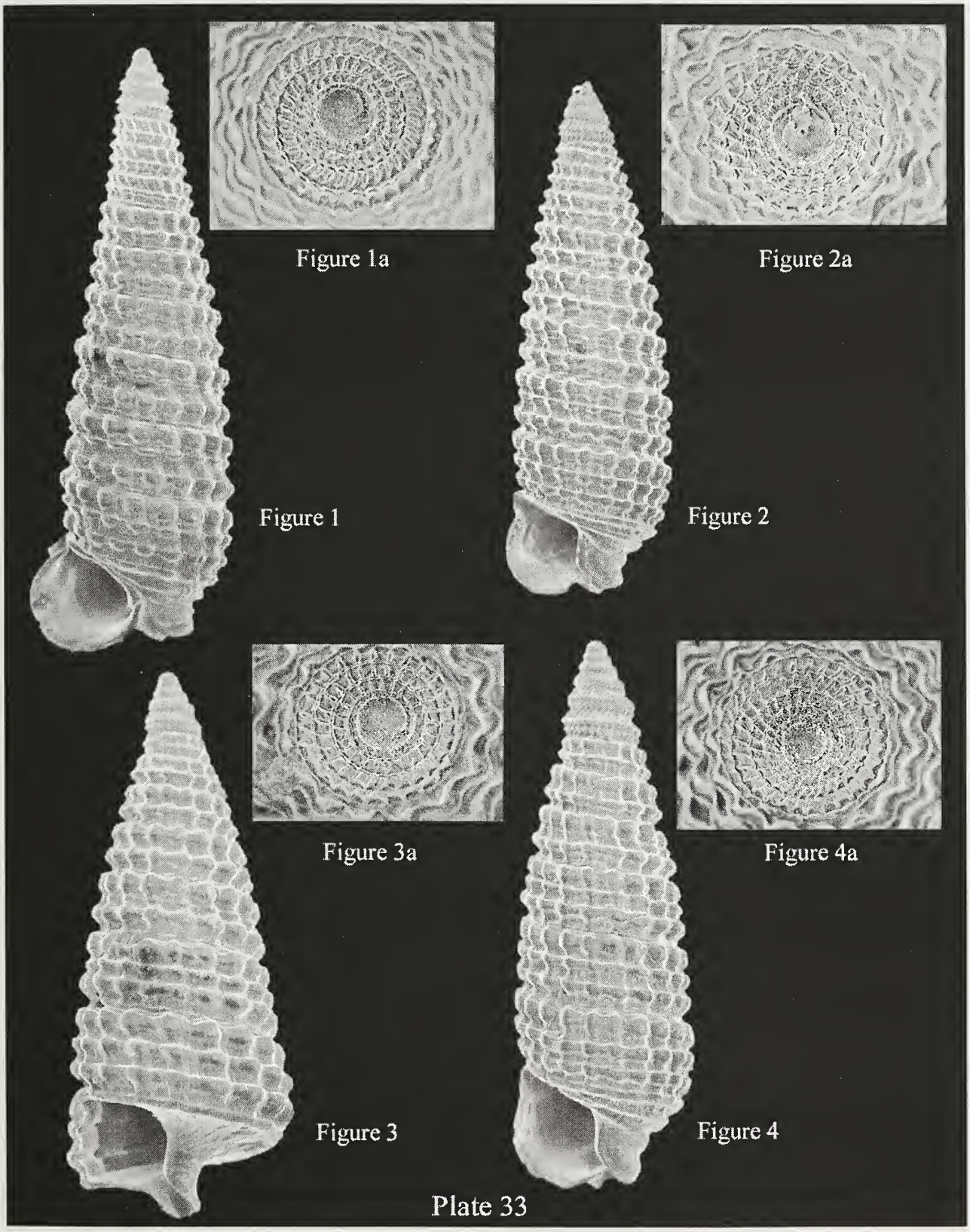
Figure 1a
Figure 2a
Figure 1
Figure 2
Figure 3a
Figure 4a
Figure 3
Figure 4
Plate 33

Plate 34

Figures 1, 1a *Triphora* sp. 4.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), ?live, rock, barnacle and gorgonian sp. shakings, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 3.91 mm (SEM).

Figures 2, 2a *Triphora* sp. 5.
Isla de Malpelo, Colombia, "Widowmaker", South Rocks (03°59.816'N, 81°36.906'W), ?live, clusters of dead barnacles, shakings, 11 to 24 m (35 to 78 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 3.42 mm (SEM).

Figures 3, 3a *Triphora* sp. 6.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, rock, barnacle and gorgonian sp. shakings, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 2.17 mm (SEM).

Figure 4 *Metaxia convexa* (Carpenter, 1857).
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), sloping w/ turnable scree and dead *Pavona* sp., 9 to 38 m (30 to 125 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 4.7 mm.

Figure 4a *Metaxia convexa* (Carpenter, 1857).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, rock, barnacle and gorgonian sp. shakings, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.21 mm (SEM). Juvenile specimen showing protoconch. Debris evident in aperture.

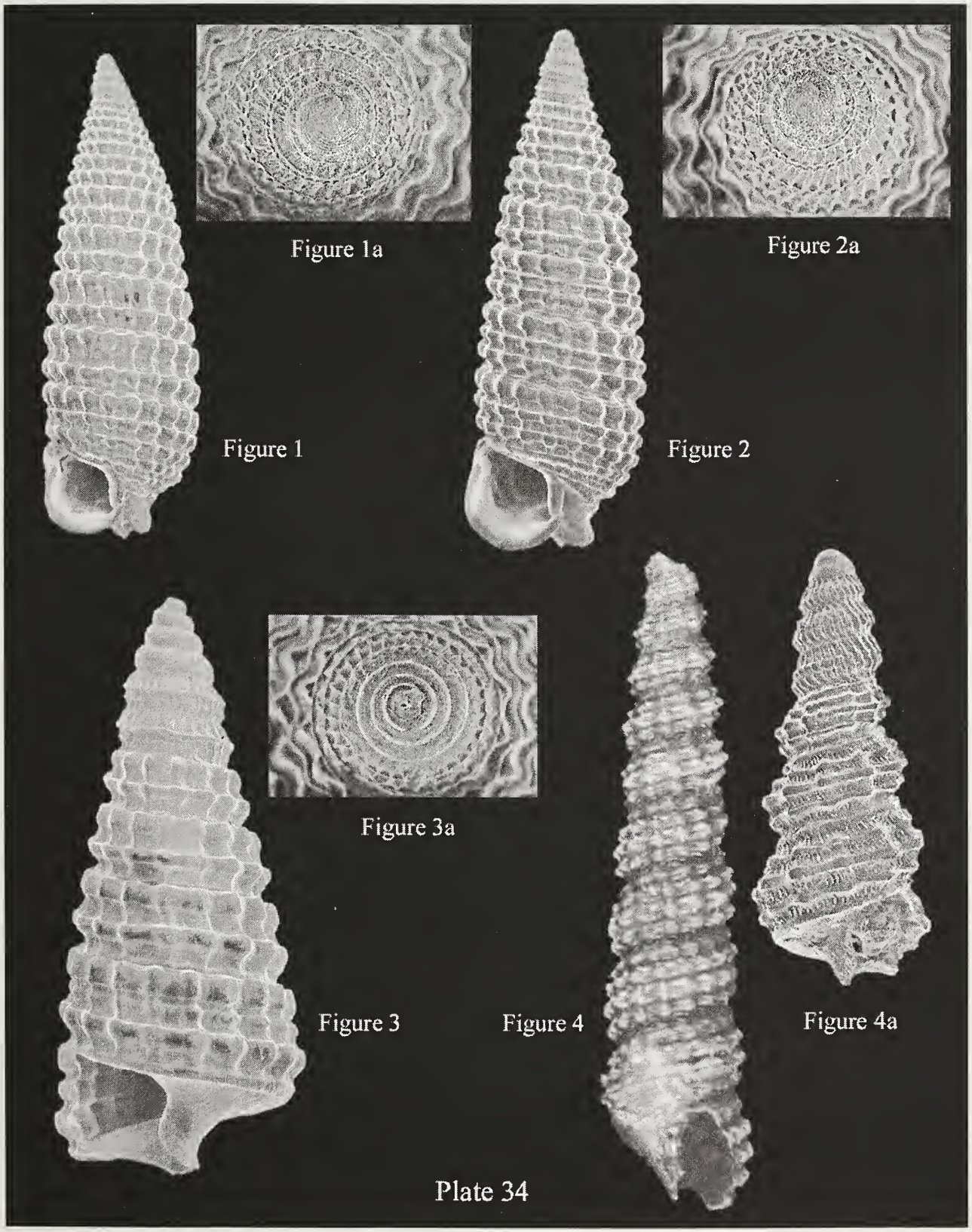
Figure 1a
Figure 2a
Figure 1
Figure 2
Figure 3a
Figure 3
Figure 4
Figure 4a
Plate 34

Plate 35

Figure 1 *Hexaplex (Muricanthus) princeps* (Broderip, 1833).
Isla de Malpelo, Colombia, "Saul/David", South Rocks (03°59.816'N, 81°36.904'W), live, on rock wall, 12 m (40 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 91.0 mm. Operculum showing in aperture.

Figure 2 *Chicoreus (Phyllonotus) eversoni* D'Attilio, Myers & Shasky, 1987.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, in clutches of *Octopus hubbsorum*, 15 m (50 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 9 March 2000. Size: 175.0 mm. Protoconch absent, operculum showing in aperture.

Figure 3 *Aspella hastula* (Reeve, 1844).
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), sloping sand and turnable scree, live, on underside of rock, 9 to 23 m (30 to 75 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 12.1 mm.

Figure 4 *Aspella pyramidalis* (Reeve, 1844).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.388'N, 81°36.209'W), living on underside of rock, 8 to 20 m (25 to 65 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 11.8 mm.

Figure 5 *Muricopsis (Muricopsis) westonensis* Myers & D'Attilio, 1990.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.388'N, 81°36.209'W), crabbed, under turnable rock on scree slope, 11 to 20 m (36 to 65 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 23.2 mm (protoconch broken).

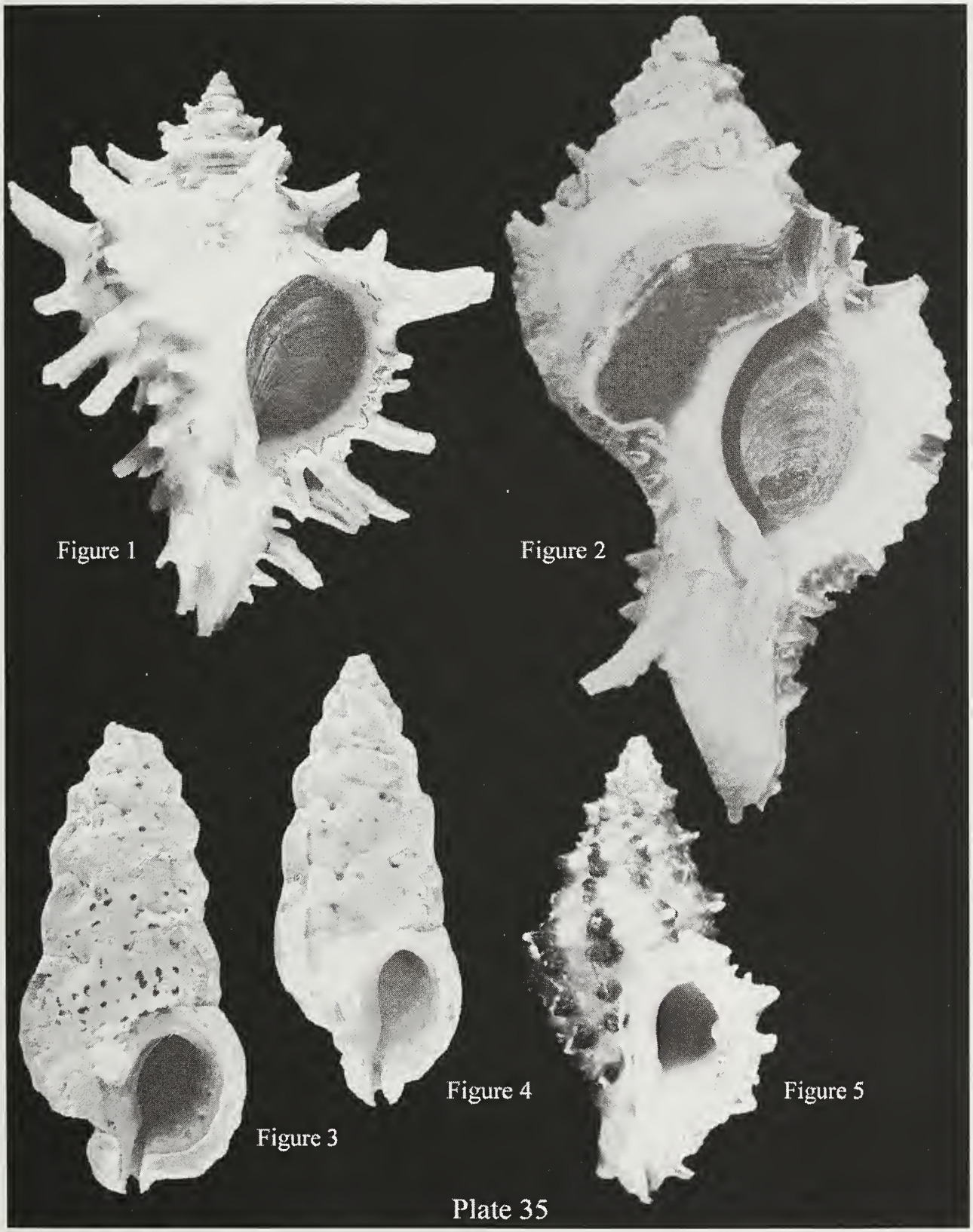

Plate 35

Plate 36

Figure 1 *Favartia* (*Favartia*) *cocosensis* Myers & D'Attilio, 1990.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), live, on underside of rock, 11 to 15 m (36 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 7.4 mm. Operculum showing in aperture. Photo: D.K. Mulliner.

Figure 2 *Favartia* (*Favartia*) *incisa* (Broderip, 1833).
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), rock and coral shakings, 38 m (125 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 12.0 mm.

Figure 3 *Bizetiella micaela* Radwin & D'Attilio, 1972.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), live, rock and coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 6.2 mm. Operculum showing in aperture.

Figure 4 *Pterotyphis* (*Tripterotyphis*) *lowei lowei* (Pilsbry, 1931).
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), sloping sand and turnable scree, live, shakings, 9 to 23 m (30 to 75 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 10.9 mm.

Figures 5, 5a *Pascula rufonotata* (Carpenter, 1864).
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), live, turnable scree and dead *Pavona* sp. in sand, shakings, 9 to 38 m (30 to 125 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 10.3 mm and 8.1 mm, respectively. Showing variable shape and pattern of the species.

Figure 6 *Pascula* sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), turnable scree and dead *Pavona* sp. in sand, 9 to 23 m (30 to 75 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 13.0 mm.

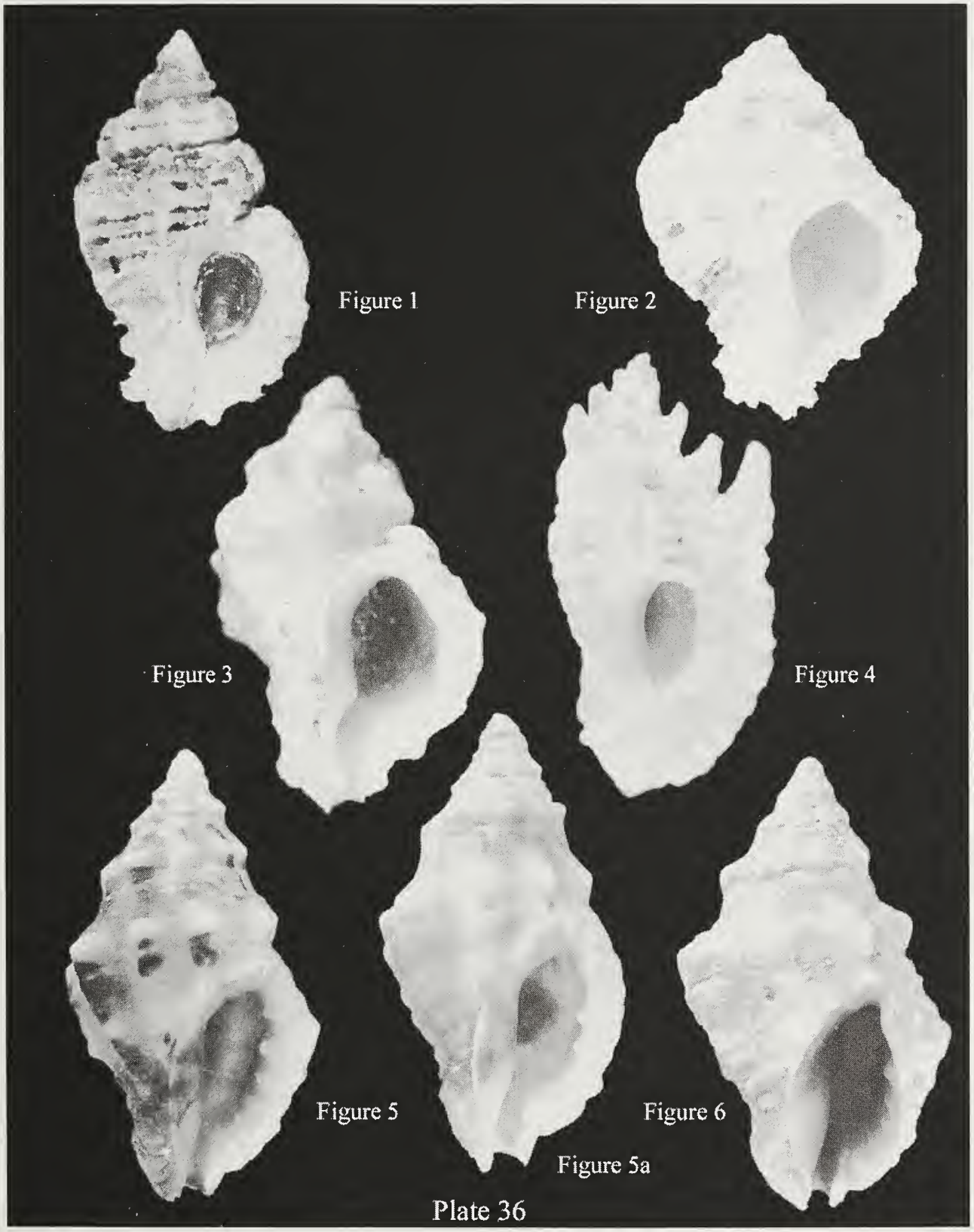
Figure 1
Figure 2
Figure 3
Figure 4
Figure 5
Figure 6
Figure 5a

Plate 36

Plate 37

Figure 1 *Vitularia salebrosa* (King & Broderip, 1832).
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), dead, under rock, 12 to 23 m (40 to 77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 10.8 mm.

Figure 2 *Mancinella speciosa* (Valenciennes, 1832).
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), live, attached to underside of turnable rock, 12 to 23 m (40 to 77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 20.7 mm.

Figure 3 *Mancinella triangularis* (Blainville, 1832).
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), live, attached to underside of turnable rock, 12 to 23 m (40 to 77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 14.2 mm.

Figure 4 *Plicopurpura pansa* (Gould, 1853).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), live, intertidal, attached to lava rock at splash zone, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 45.9 mm. Operculum showing in aperture.

Figure 5 *Acanthais biserialis* (Blainville, 1832).
Isla de Malpelo, Colombia, "Widowmaker", South Rocks (03°59.816'N, 81°36.906'W), living on rock wall w/ clusters of dead barnacles, 11 m (35 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 60.8 mm. Operculum showing in aperture.

Figure 6 *Acanthais brevidentata* (Wood, 1828).
Isla de Malpelo, Colombia, (03°59.0'N, 81°34.0'W), live, 0 m, intertidal, LACM 33-7.2, R/V *Velero* III, 16 January 1933. Size: 18.5 mm. Note that labial spine has not formed on this immature specimen.

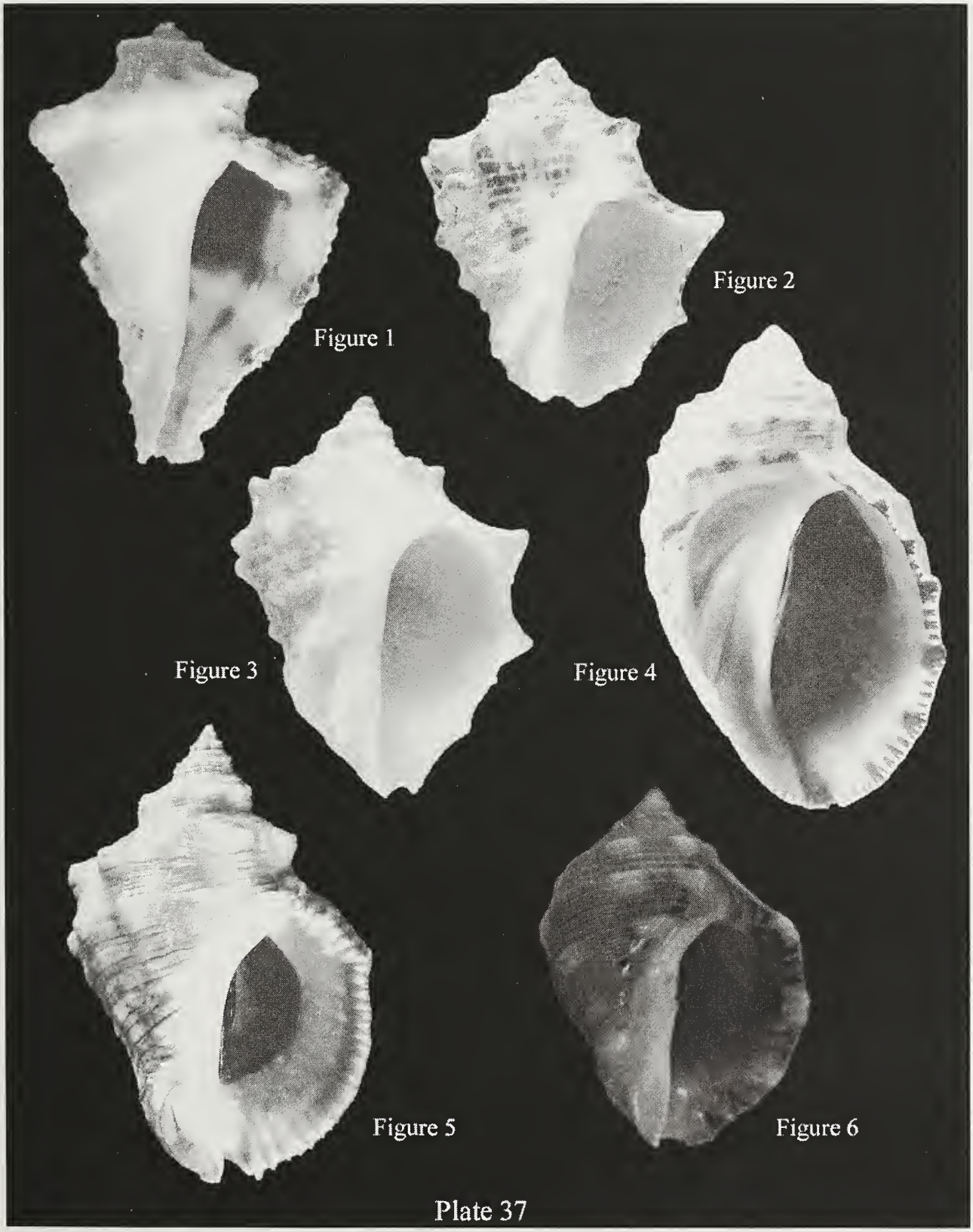

Plate 37

Plate 38

Figure 1 *Neorapana muricata* (Broderip, 1832).
Isla de Malpelo, Colombia, "Widowmaker", South Rocks (03°59.816'N, 81°36.904'W), living on rock wall w/ clusters of dead barnacles, 11 m (35 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 84.2 mm. Operculum showing in aperture.

Figure 2 *Tribulus planospira* (Lamarck, 1822).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), on rocks and rock wall, 11 to 18 m (35 to 59 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 51.1 mm. Operculum showing in aperture.

Figure 3 *Coralliophila* (*Coralliophila*) *macleani* Shasky, 1970.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), pink gorgonian shakings and holdfasts, 30 m (100 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 9.5 mm.

Figure 4 *Coralliophila* (*Coralliophila*) *neritoides* (Lamarck, 1816).
Isla de Malpelo, Colombia, "Coral Gardens" northeast end (04°00.226'N, 81°36.247'W), sloping sand and rubble, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 18.5 mm.

Figure 5 *Coralliophila* (*Coralliophila*) *rocasuciae* Myers & D'Attilio, 1990.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.388'N, 81°36.209'W), living on underside of turnable rock on scree slope, 10 to 20 m (33 to 65 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 10.7 mm. Photo: D.K. Mulliner.

Figure 6 *Coralliophila (Pseudomurex) parva* (E.A. Smith, 1877).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), gorgonian shakings on vertical wall, 24 to 34 m (80 to 113 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 9.1 mm.

Figure 7 Coralliophilidae sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), *Ostrea* and barnacle shakings, 17 to 43 m (55 to 140 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 23.4 mm.

Figure 8 *Quoyula madreporarum* (Sowerby, 1834).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), live, on hard coral, 11 to 18 m (35 to 59 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 13.1 mm. Operculum just evident in aperture.

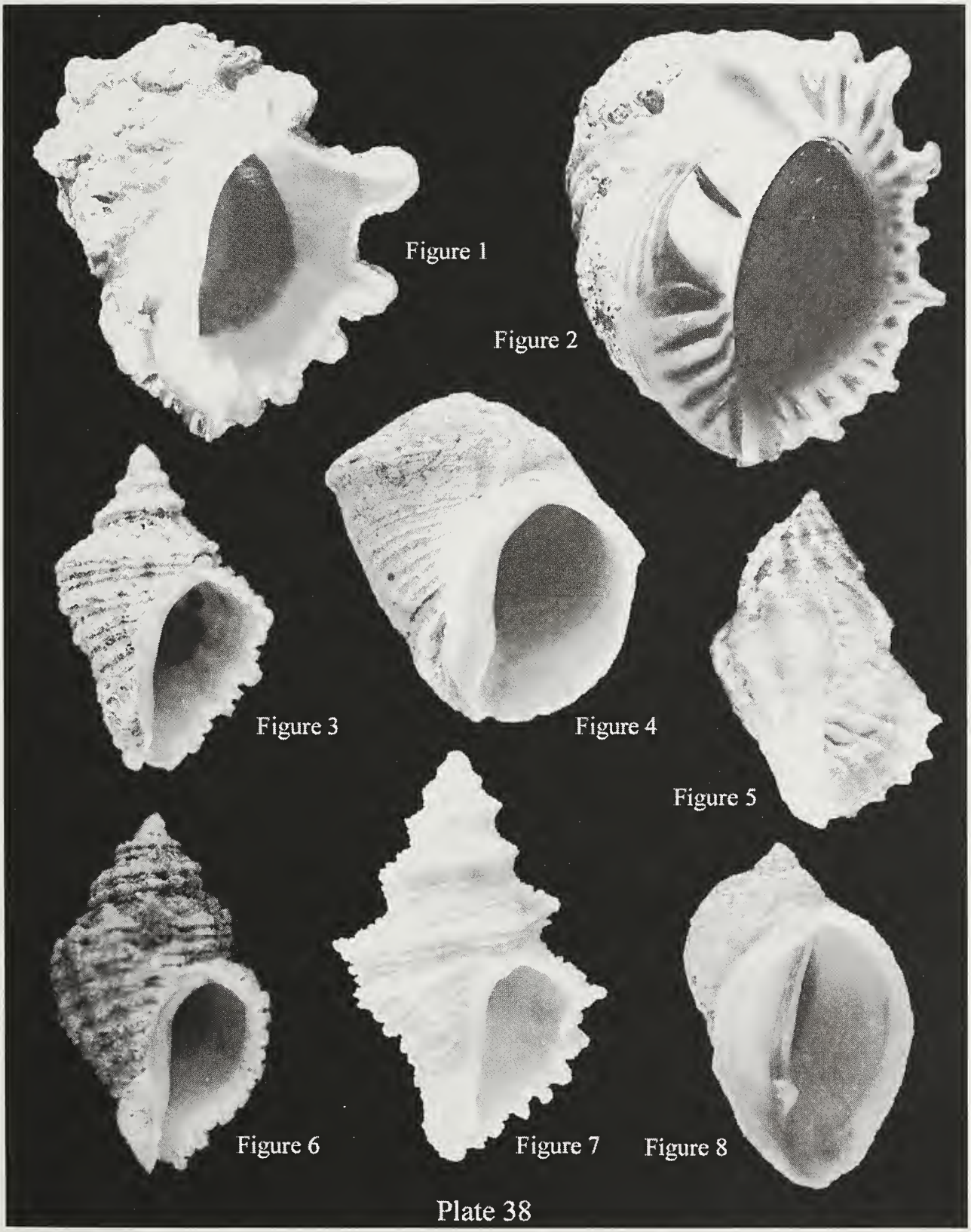
Figure 1
Figure 2
Figure 3
Figure 4
Figure 5
Figure 6
Figure 7
Figure 8

Plate 38

Plate 39

Figure 1 *Caducifer biliratus* (Reeve, 1846).
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), sloping sand and rubble, 18 m (60 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 23.0 mm (sub-adult, protoconch absent).

Figure 2 *Caducifer cinis* (Reeve, 1846).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.388'N, 81°36.209'W), living under rock, 11 to 20 m (35 to 67 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 31.1 mm.

Figure 3 *Cantharus* (*Pollia*) *sanguinolentus* (Duclos, 1833).
Isla de Malpelo, Colombia, "Hammerwall" north end (04°00.388'N, 81°36.209'W), dead, turnable rocks on scree slope, 11 to 20 m (35 to 67 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 23.2 mm.

Figure 4 *Cantharus* n.sp.
Isla de Malpelo, Colombia, "Hammerwall" north end (04°00.388'N, 81°36.209'W), living in dead *Pocillopora* sp., 18 to 30 m (60 to 100 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 23.6 mm.

Figure 5 *Engina pyrostoma* (Sowerby, 1832).
Isla de Malpelo, Colombia, "Hammerwall" north end (04°00.388'N, 81°36.209'W), living under rock on scree slope, 11 to 20 m (35 to 67 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 10 March 2000. Size: 12.0 mm (immature lip).

Figure 6 *Engina* cf. *solida* Dall, 1917.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), barnacle shakings, live, 9 to 18 m (30 to 58 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 9 March 2000. Size: 9.0 mm (immature lip).

Figure 7 *Engina tabogaensis* Bartsch, 1931.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), sloping sand and turnable scree, 9 to 23 m (30 to 75 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 11.5 mm.

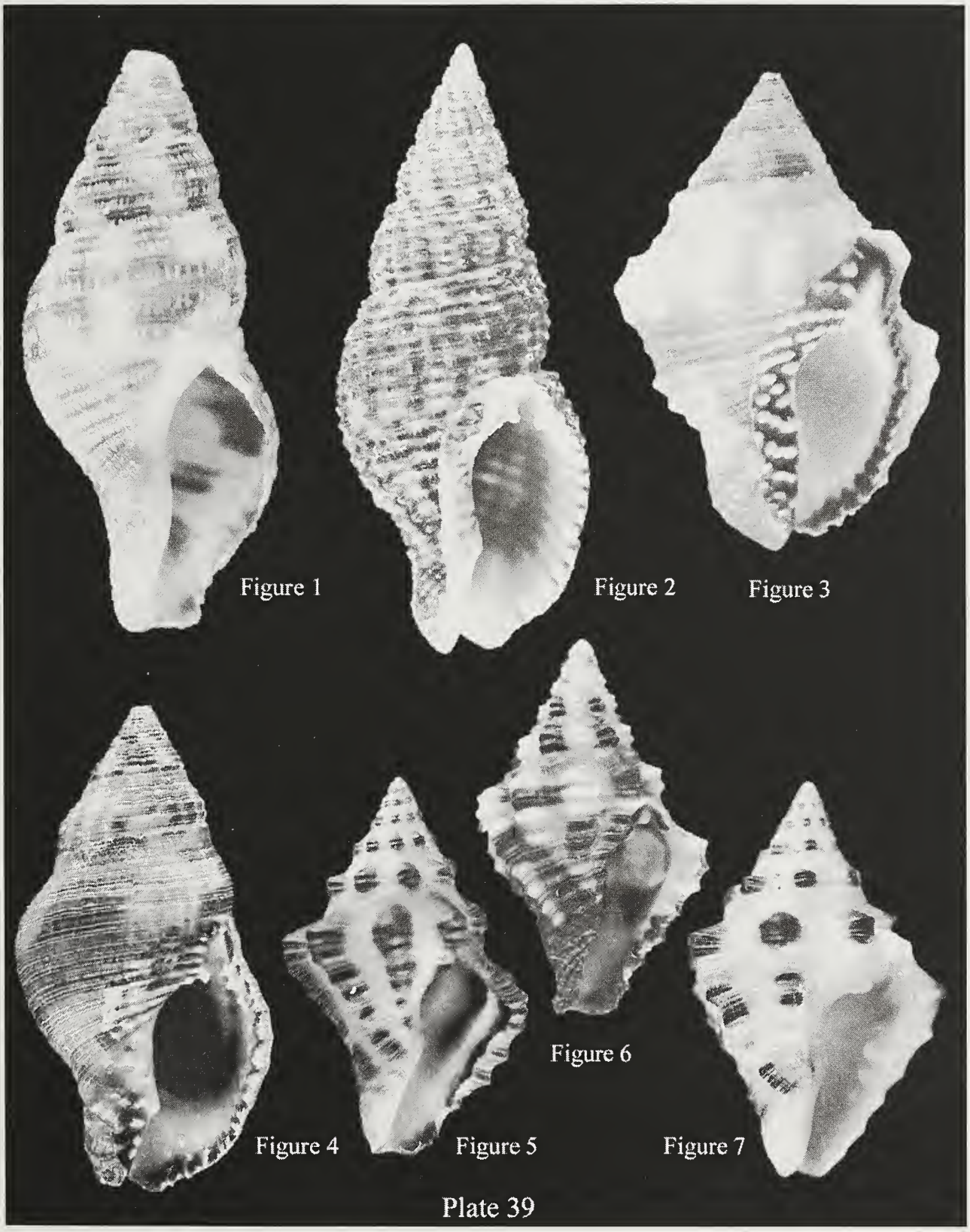

Plate 39

Plate 40

Figure 1 *Anachis* sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, gorgonian shakings on vertical wall, 24 to 34 m (80 to 113 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 5.2 mm.

Figure 2 *Anachis* sp. 2.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), SCUBA, H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 5.6 mm.

Figure 3 *Parvanachis dalli* (Bartsch, 1931).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, barnacle shakings, 9 to 18 m (30 to 58 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 9 March 2000. Size: 5.5 mm.

Figure 4 *Zafrona incerta* (Stearns, 1892).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.13'N, 81°36.73'W), live, on underside of turnable rock, 15 to 26 m (50 to 85 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 8.6 mm.

Figure 5 *Steironepion melanostica* (Pilsbry & Lowe, 1932).
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), living under rock, shakings, 18 to 29 m (60 to 97 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 5.45 mm.

Figure 6 *Zanassarina* sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, gorgonian shakings on vertical wall, 24 to 34 m (80 to 113 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 5.3 mm.

Figure 7 *Nassarius shaskyi* McLean, 1970.
Isla de Malpelo, Colombia, "Bombs Away" (03°59.922'N, 81°36.502'W), live, on sand and light rubble, predawn dive, 24 to 37 m (80 to 120 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 17.4 mm (immature lip).

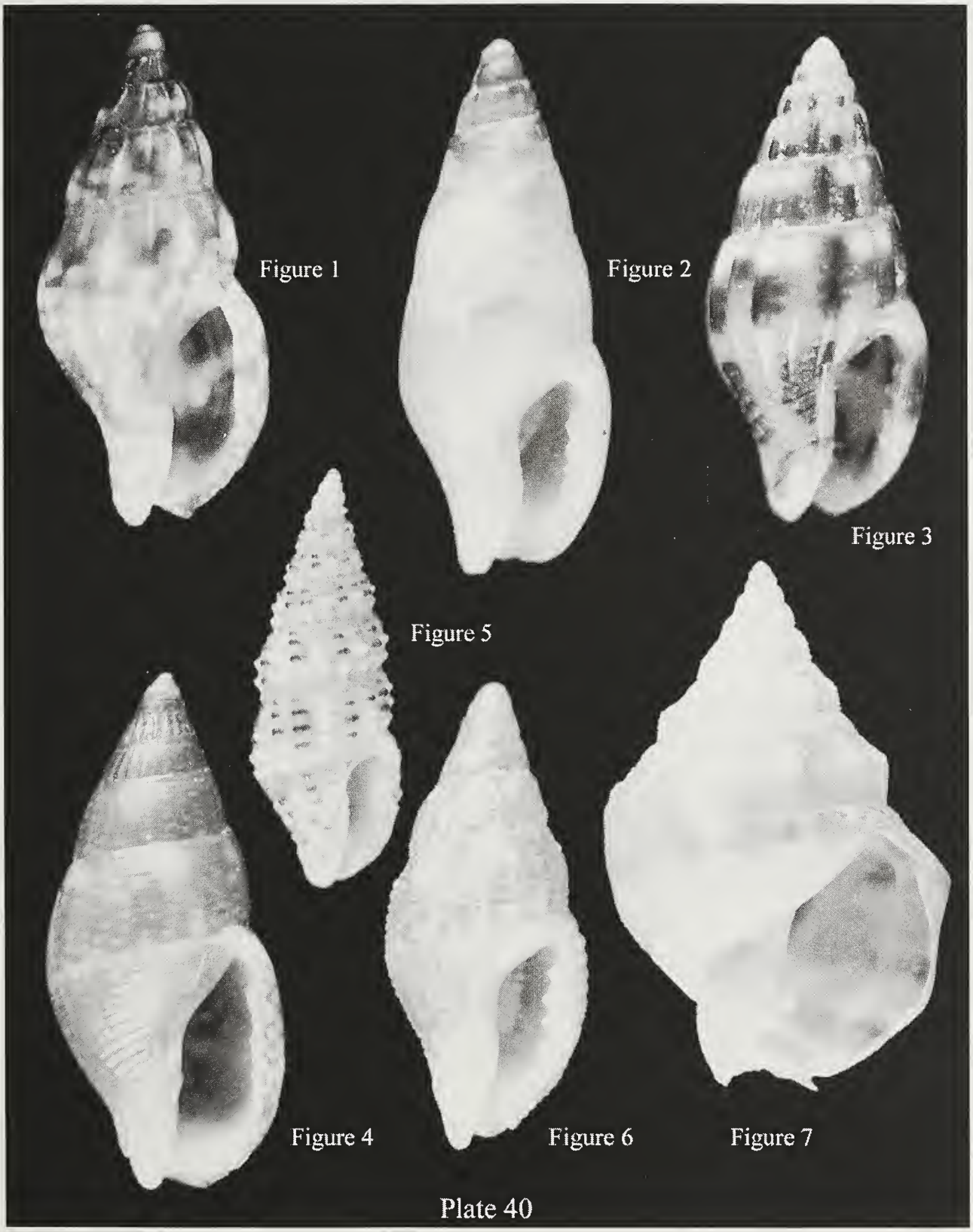

Plate 40

Plate 41

Figure 1 *Pleuroploca princeps* (Sowerby, 1825).
Isla de Malpelo, Colombia, "Widowmaker", South Rocks (03°59.816'N, 81°36.906'W), living on rock and sand ledge in sand, 18 m (60 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26-27 March 1998. Size: 260.0 mm. Operculum showing in aperture.

Figure 2 *Leucozonia tuberculata* (Broderip, 1833).
Isla de Malpelo, Colombia, "Saul/David", South Rocks (03°59.816'N, 81°36.904'W), live, on rock, 12 m (40 ft), leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 19.0 mm.

Figure 3 *Opeatostoma pseudodon* (Burrow, 1815).
Isla de Malpelo, Colombia, "Widowmaker", South Rocks (03°59.816'N, 81°36.906'W), living on rock wall w/ clusters of dead barnacles, 15 m (50 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26-27 March 1998. Size: 37.8 mm. Operculum showing in aperture.

Figure 4 *Fusinus (Fusinus) turris* (Valenciennes, 1832).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), sand and rubble 55 m (180 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 215.0 mm (crabbed specimen).

Figure 5 ?Fasciolariidae sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), SCUBA, H_2O 68°-77°, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.55 mm (SEM).

Figure 6 *Olivella* (*Minioliva*) sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, dead barnacle test shakings, 40 to 56 m (130 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 5.1 mm. Color: translucent white. Note columellar callus stopping at end of aperture which places the species in the subgenus *Minioliva*.

Figures 7, 7a,b *Olivella* (*Minioliva*) sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, dead barnacle test shakings, 40 to 56 m (130 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 4.42 mm (SEM).

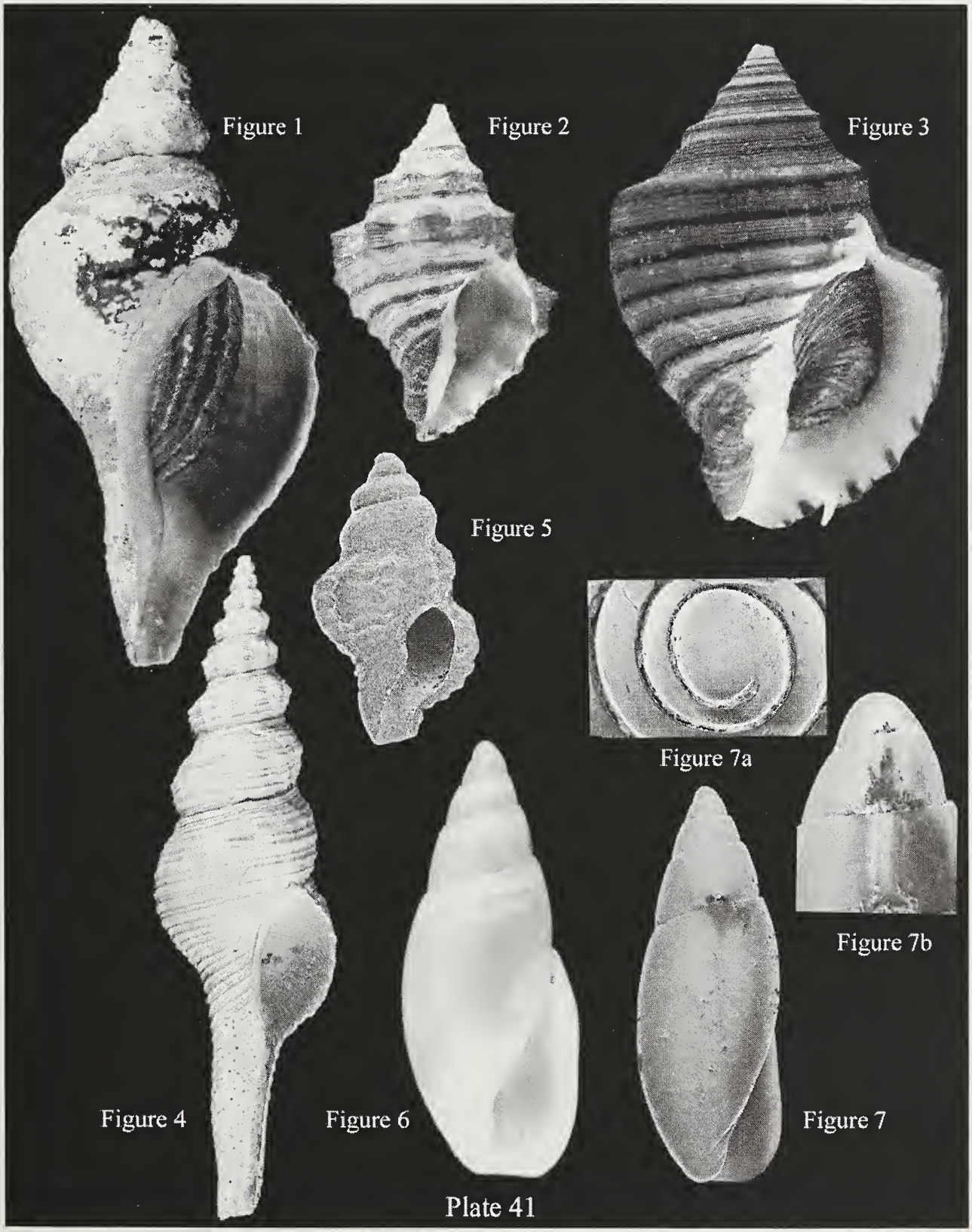
Figure 1
Figure 2
Figure 3
Figure 5
Figure 7a
Figure 7b
Figure 4
Figure 6
Figure 7

Plate 41

Plate 42

Figure 1 *Cystiscus* sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 2.53 mm (SEM).

Figure 2 *Gibberula* sp. 1.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), live, rock and dead coral shakings, 12 to 30 m (40 to 100 ft), H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 2.12 mm (SEM).

Figure 3 *Gibberula* sp. 2.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), live, rock and dead coral shakings, 12 to 30 m (40 to 100 ft), H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March to 1 April 1998. Size: 2.22 mm (SEM). Debris evident in aperture.

Figure 4 *Gibberula* sp. 3.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 1.95 mm (SEM).

Figure 5 *Gibberula* sp. 4.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), M/V *The Inzan Tiger*, 11 March 2000, live, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser. Size: 1.93 mm (SEM).

Figure 6 *Persicula* sp. 1.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.115'N, 81°36.651'W), live, under rock in clean sand, 15 m (50 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 7.9 mm.

Figure 7 *Persicula* sp. 2.
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), living under rock, shakings, 32 m (105 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 4.7 mm.

Figure 8 *Persicula* sp. 3.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 2.01 mm (SEM). Note fine teeth within outer lip.

Figure 9 *Granulina* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), SCUBA, H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 2.04 mm (SEM).

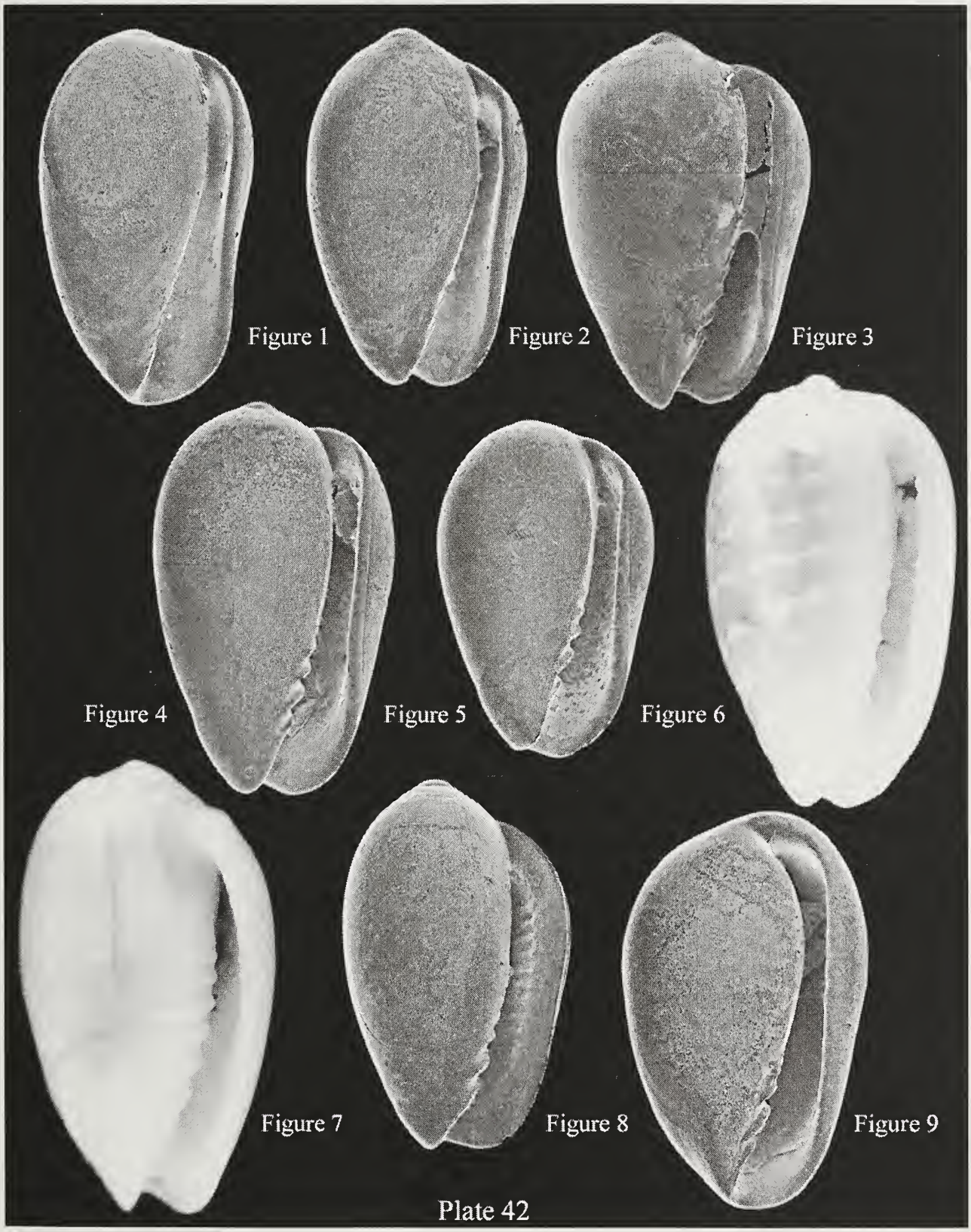
Figure 1
Figure 2
Figure 3
Figure 4
Figure 5
Figure 6
Figure 7
Figure 8
Figure 9

Plate 42

Plate 43

Figure 1 *Mitra* (*Nebularia*) *crenata* Broderip, 1836.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), sloping sand and turnable scree, live, under rock, 9 to 23 m (30 to 75 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 11.0 mm.

Figure 2 *Mitra* (*Nebularia*) *effusa* Broderip, 1836.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.160'N, 81°36.745'W), live, in sand under turnable rock, 12 to 19 m (40 to 64 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 19.1 mm.

Figure 3 *Mitra* (*Nebularia*) *ferruginea* Lamarck, 1811.
Isla de Malpelo, Colombia, "Hammerwall" north end (04°00.388'N, 81°36.209'W), dead, rocks and coral, 8 to 20 m (25 to 65 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 36.2 mm.

Figure 4 *Mitra* (*Strigatella*) *tristis* Broderip, 1836.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), ?live, under rock, 11 to 18 m (35 to 59 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 20.4 mm.

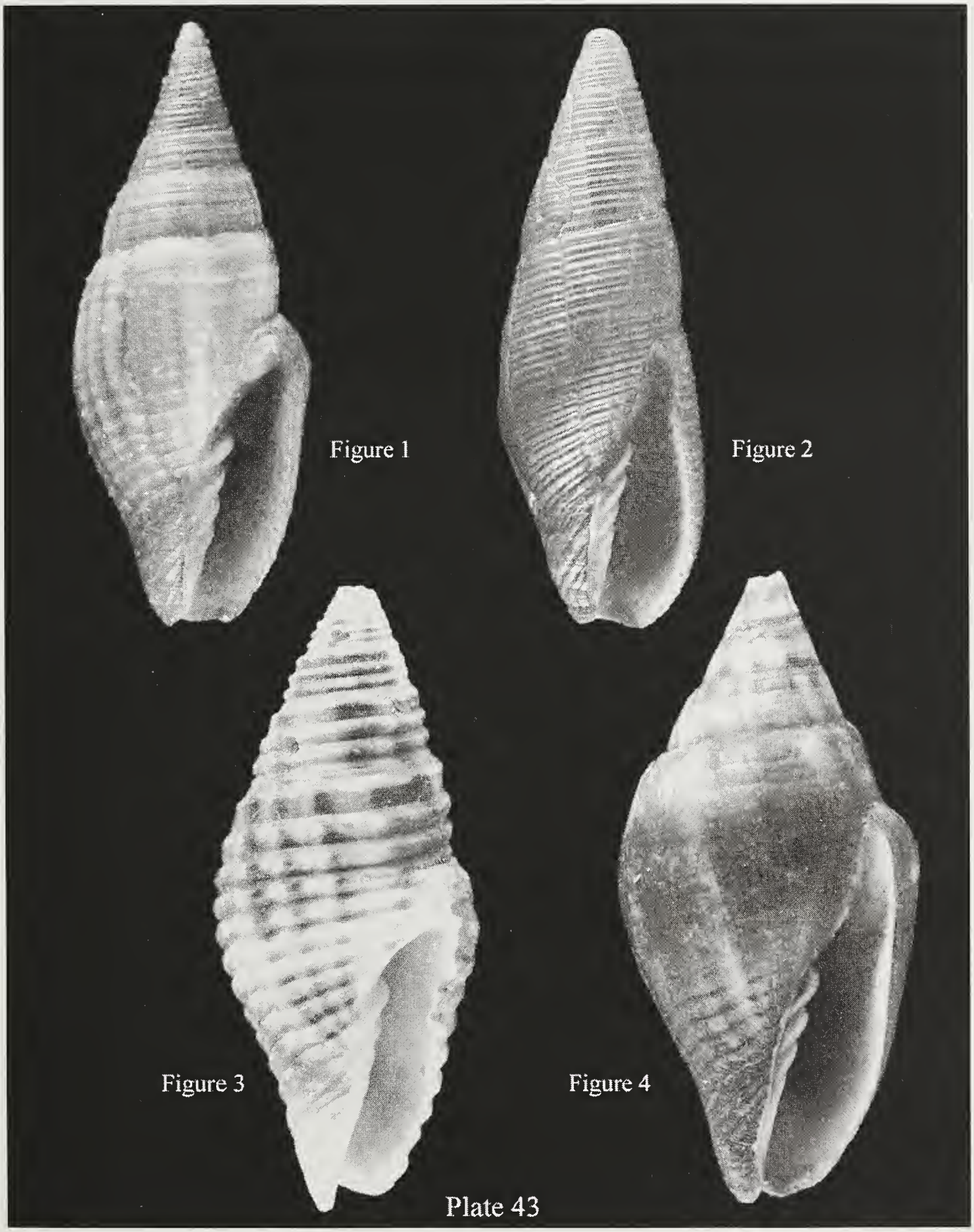

Plate 43

Plate 44

Figure 1 *Conus* (*Conus*) *diadema* Sowerby, 1834.
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), live, attached to turnable rock, 12 to 23 m (40 to 77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 31.9 mm.

Figure 2 *Conus* (*Conus*) *gladiator* Broderip, 1833.
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), dead, scree slope of turnable rock, 12 to 23 m (40 to 77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 10.9 mm (juvenile).

Figure 3 *Conus* (*Conus*) *tiaratus* Sowerby, 1833, *ex* Broderip MS.
Isla de Malpelo, Colombia, "Off and On Bay" south end (03°59.930'N, 81°36.907'W), live, under turnable rock, 12 to 23 m (40 to 77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 21.3 mm.

Figure 4 *Conus* (*Chelyconus*) *purpurascens* Sowerby, 1833, *ex* Broderip MS.
Isla de Malpelo, Colombia, "Bombs Away" (03°59.922'N, 81°36.502'W), live, on sand and rubble, 37 m (120 ft), predawn dive, H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 37.3 mm.

Figure 5 *Conus* (*Stephanoconus*) *nux* Broderip, 1833.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, under rock, 18 to 30 m (60 to 100 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 14.4 mm.

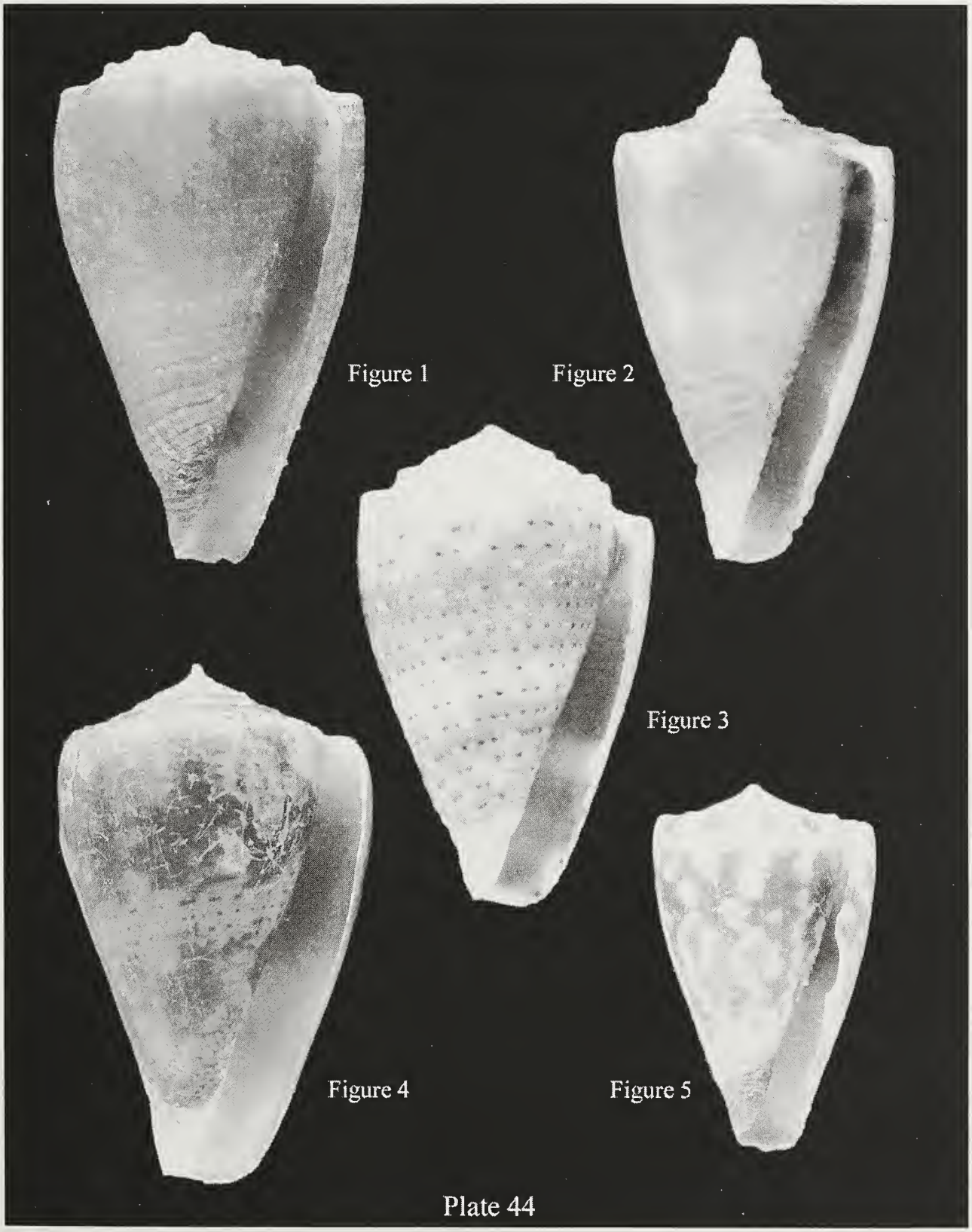

Plate 44

Plate 45

Figure 1 *Mitromorpha carpenteri* Glibert, 1954.
Isla de Malpelo, Colombia, "Hammerwall" north end (04°00.388'N, 81°36.209'W), live, rock and coral shakings, 12 to 37 m (40 to 120 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 12 March 2000. Size: 7.1 mm.

Figure 2 *Clathurella rigida* (Hinds, 1843).
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), rock and coral shakings, 18 to 29 m (60 to 97 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 6.5 mm.

Figure 3 *Microdaphne trichodes* (Dall, 1919).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), SCUBA, H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 2.28 mm (SEM).

Figure 4 Turridae sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings,15 to 46 m (50 to 150 ft), SCUBA, H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 4.8 mm. Undescribed, same taxon occurs at Isla del Coco, Costa Rica.

Figure 5 Turridae sp. 2.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, rock and dead barnacle tests, shakings, on vertical wall, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: approximately 4.0 mm, specimen lost.

Figures 6, 6a *Omalogyra* sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), turnable scree and dead *Pavona* sp. in sand, shakings, 9 to 23 m (30 to 75 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 0.69 mm (SEM).

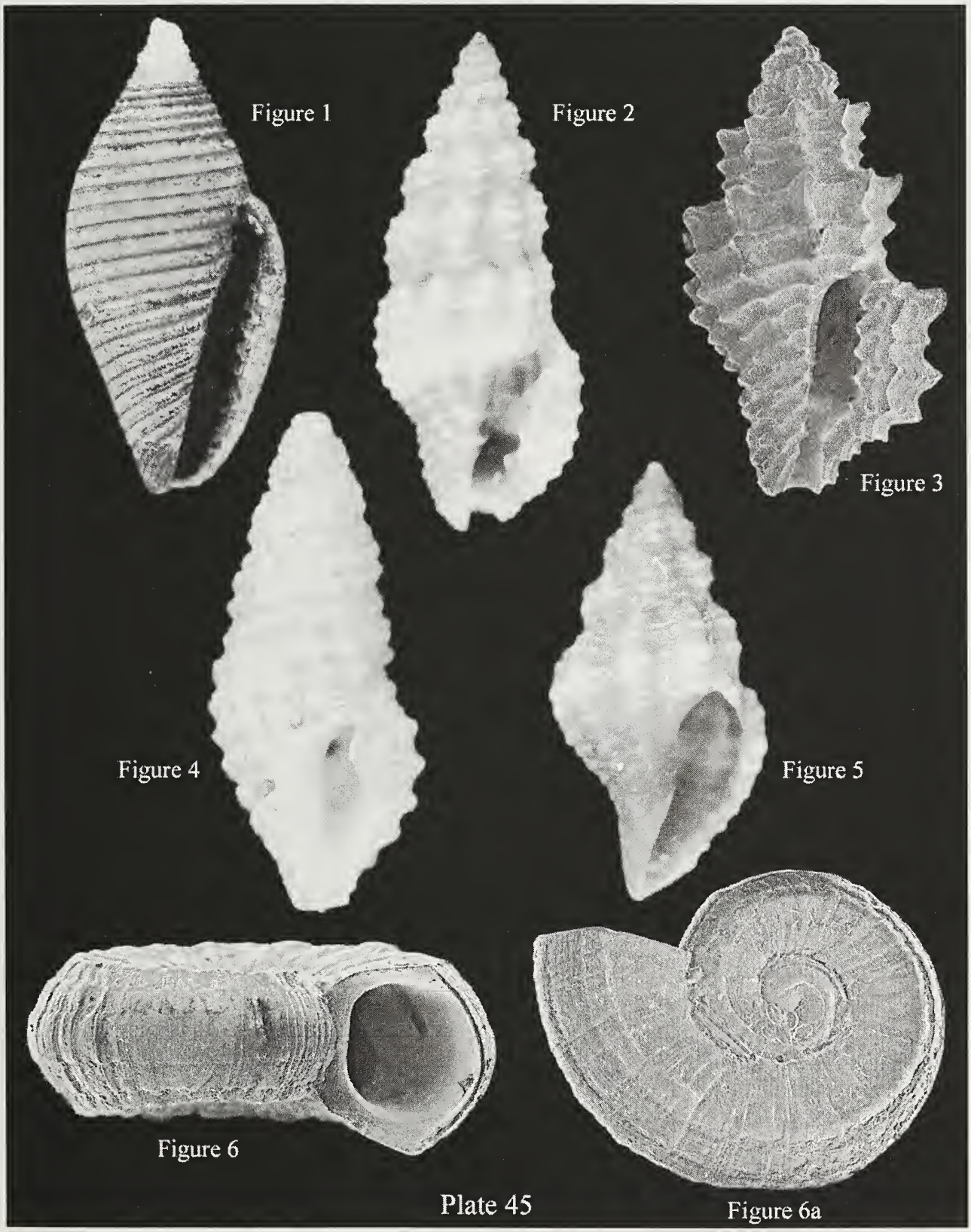
Figure 1
Figure 2
Figure 3
Figure 4
Figure 5
Figure 6
Figure 6a

Plate 45

Plate 46

Figure 1 *Heliacus* (*Torinista*) cf. *mazatlanicus* Pilsbry & Lowe, 1932.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, rock and dead barnacle tests, shakings, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 1.13 mm (SEM).

Figure 2 *Iselica* sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, rock and dead barnacle tests, shakings, 40 to 56 m (130 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 0.74 mm (SEM). Color: translucent white (live), opaque white (dead).

Figure 3 *Odostomia* sp. 1.
Isla de Malpelo, Colombia, "Scuba", South Rocks (03°59.628'N, 81°36.841'W), live, rock and coral shakings, 18 to 29 m (60 to 97 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 1.7 mm (SEM).

Figures 4, 4a *Odostomia* sp. 2.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), dead, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 0.58 mm (SEM). Debris evident in aperture.

Figure 5 *Odostomia* sp. 3.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), gorgonian shakings on vertical wall, 24 to 34 m (80 to 113 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 1.76 mm (SEM).

Figure 6 *Odostomia* sp. 4.
Isla de Malpelo, Colombia, "Little Bob", North Rocks (04°00.20'N, 81°36.10'W), live, turnable scree shakings, 12 to 27 m (40 to 89 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 12 March 2000. Size: 0.76 mm (SEM).

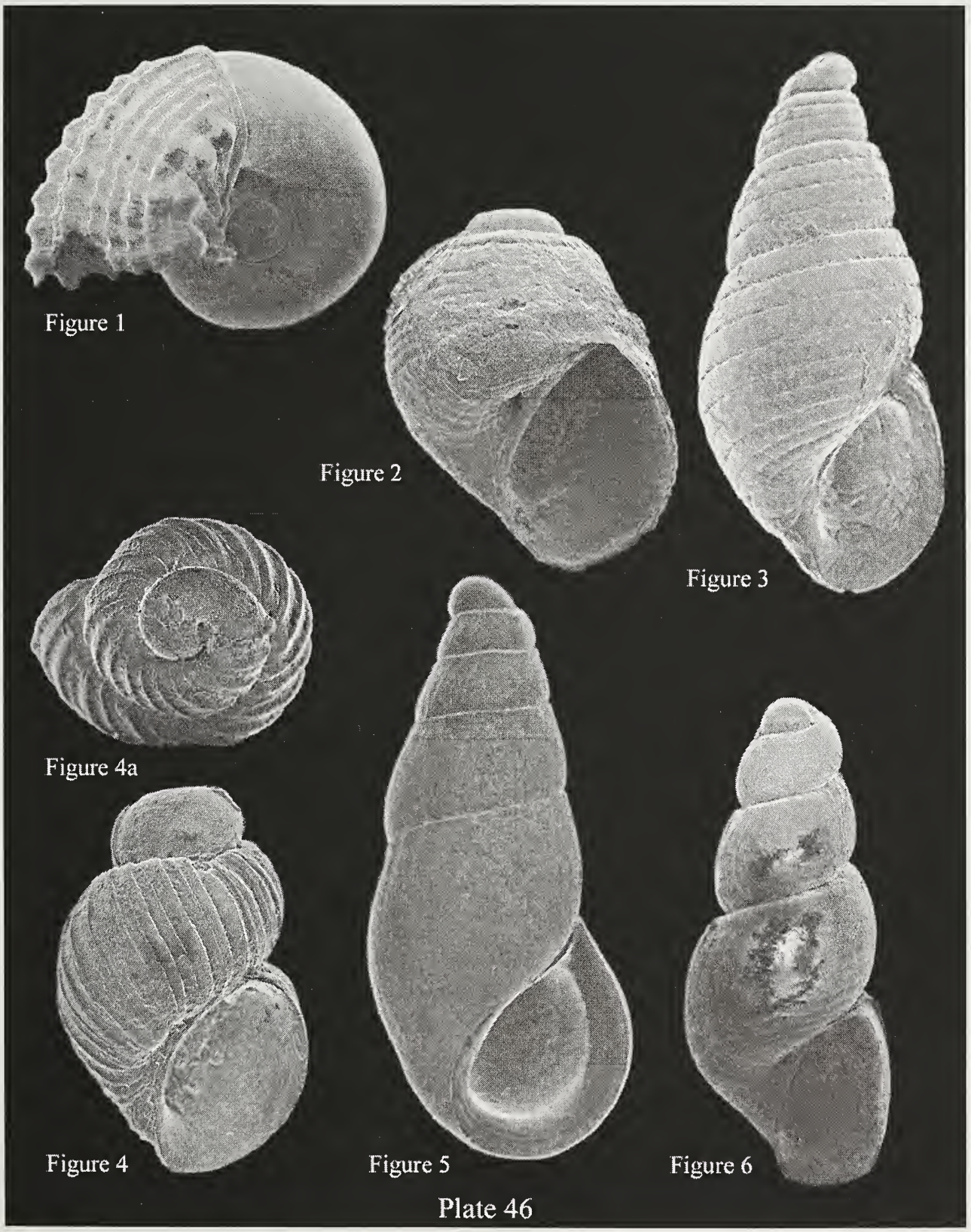
Figure 1
Figure 2
Figure 3
Figure 4a
Figure 4
Figure 5
Figure 6

Plate 46

Plate 47

Figure 1 *Herviera gliriella* (Melville & Standen, 1896).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, *Ostrea* shakings, 41 to 44 m (135 to 144 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 1.81 mm (SEM).

Figures 2, 2a *Turbonilla* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), sloping with turnable scree, shakings, 15 to 46 m (50 to 150 ft), SCUBA, H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 0.43 mm (SEM). Shell transparent, debris evident in aperture.

Figure 3 cf. *Graphis* sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), live, rock and coral shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 0.91 mm (SEM).

Figures 4, 4a *Orbitestella* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, shakings, 15 to 46 m (50 to 150), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 0.67 mm (SEM).

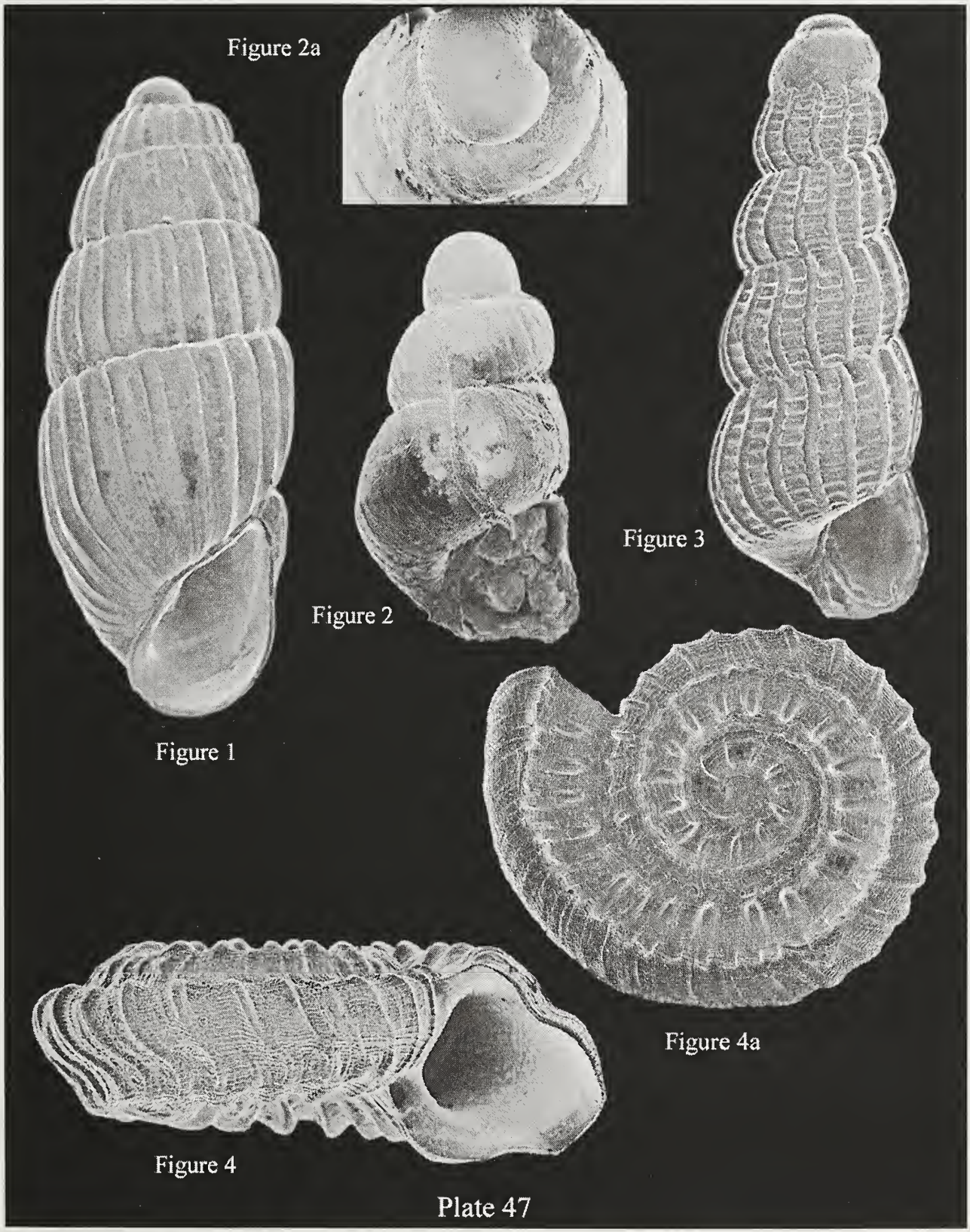
Figure 2a
Figure 3
Figure 2
Figure 1
Figure 4a
Figure 4
Plate 47

Plate 48

Figures 1, 1a *Berthellina* cf. *engeli* Gardiner, 1936.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), dead, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 1.36 mm (SEM).

Figures 2, 2a *Limacina* (*Munthea*) *trochiformis* (d'Orbigny, 1836).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), dead, shakings, 15 to 46 m (50 to 150 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 0.47 mm (SEM). Transparent, yellowish tinge.

Figure 3 *Williamia peltoides* (Carpenter, 1864).
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), dead, sloping sand and turnable scree, shakings, 12 to 15 m (40 to 50 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 2.3 mm.

Figure 4 cf. *Trimusculus stellatus* (Sowerby, 1835).
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), dead, sloping sand and turnable scree, shakings, 9 to 38 m (30 to 125 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 2.8 mm, juvenile (SEM).

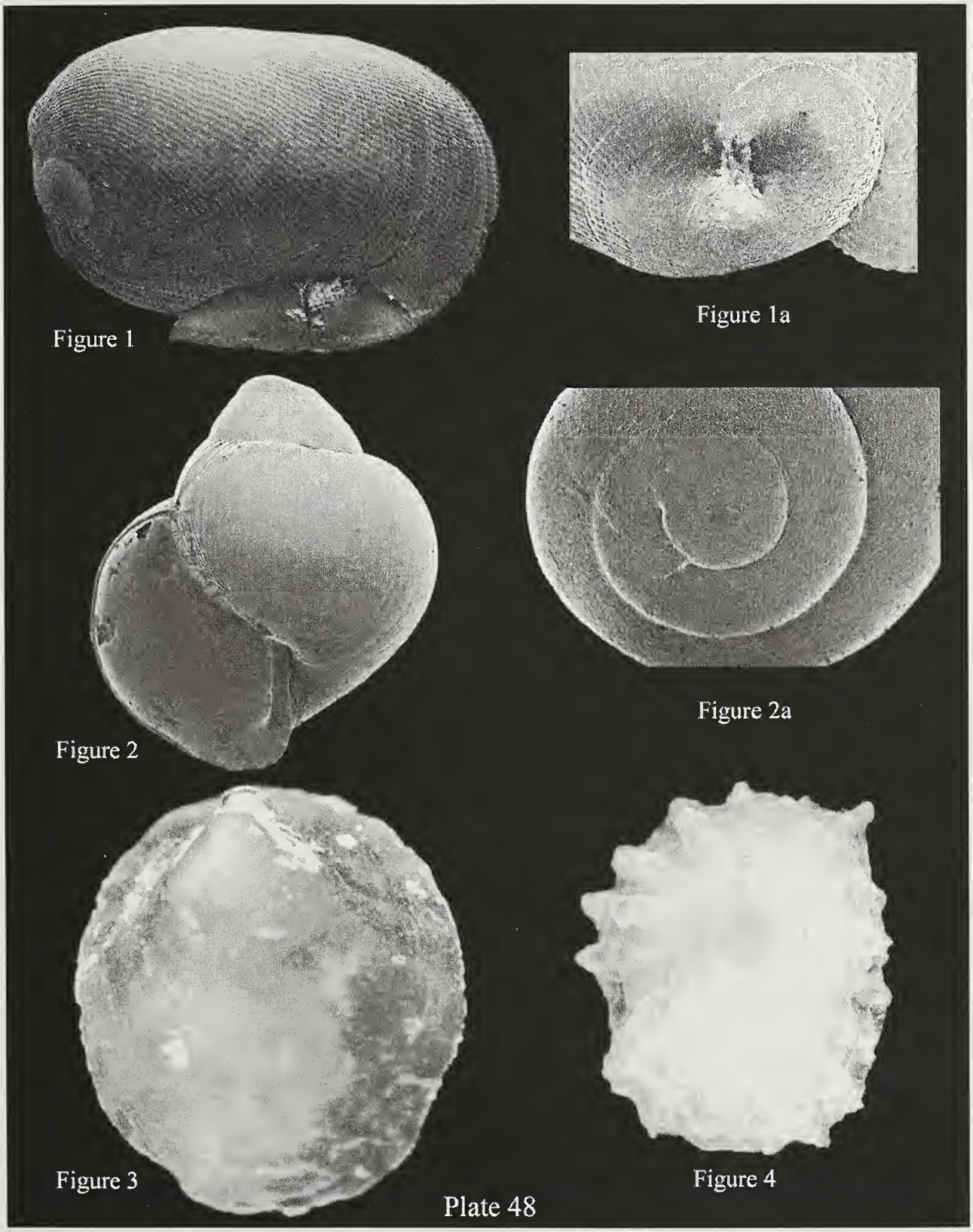

Plate 48

Plate 49

Figure 1 *Chaetopleura* sp. 1.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00'N, 81°36'W), live, rock and coral shakings, 12 to 30 m (40 to 100 ft), H_2O 78-82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March - 1 April 1998. Size: 2.6 mm.

Figure 2 *Ischnochiton* sp. 1.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, rock and dead barnacle tests, shakings, on vertical wall, 30 to 56 m (100 to 185 ft), SCUBA, H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: >3.2 mm.

Figure 3 *Ischnochiton* sp. 2.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.115'N, 81°36.651'W), live, rock and coral shakings, 12 to 15 m (40 to 50 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: >4.0 mm.

Figure 4 *Ischnochiton* sp. 3.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), live, on *Ostrea* sp., 11 m (35 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: >4.7 mm.

Figure 5 *Ischnochiton* sp. 4.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.115'N, 81°36.651'W), live, on empty shell of *Thais planospira*, 12 m (40 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 3.3 mm.

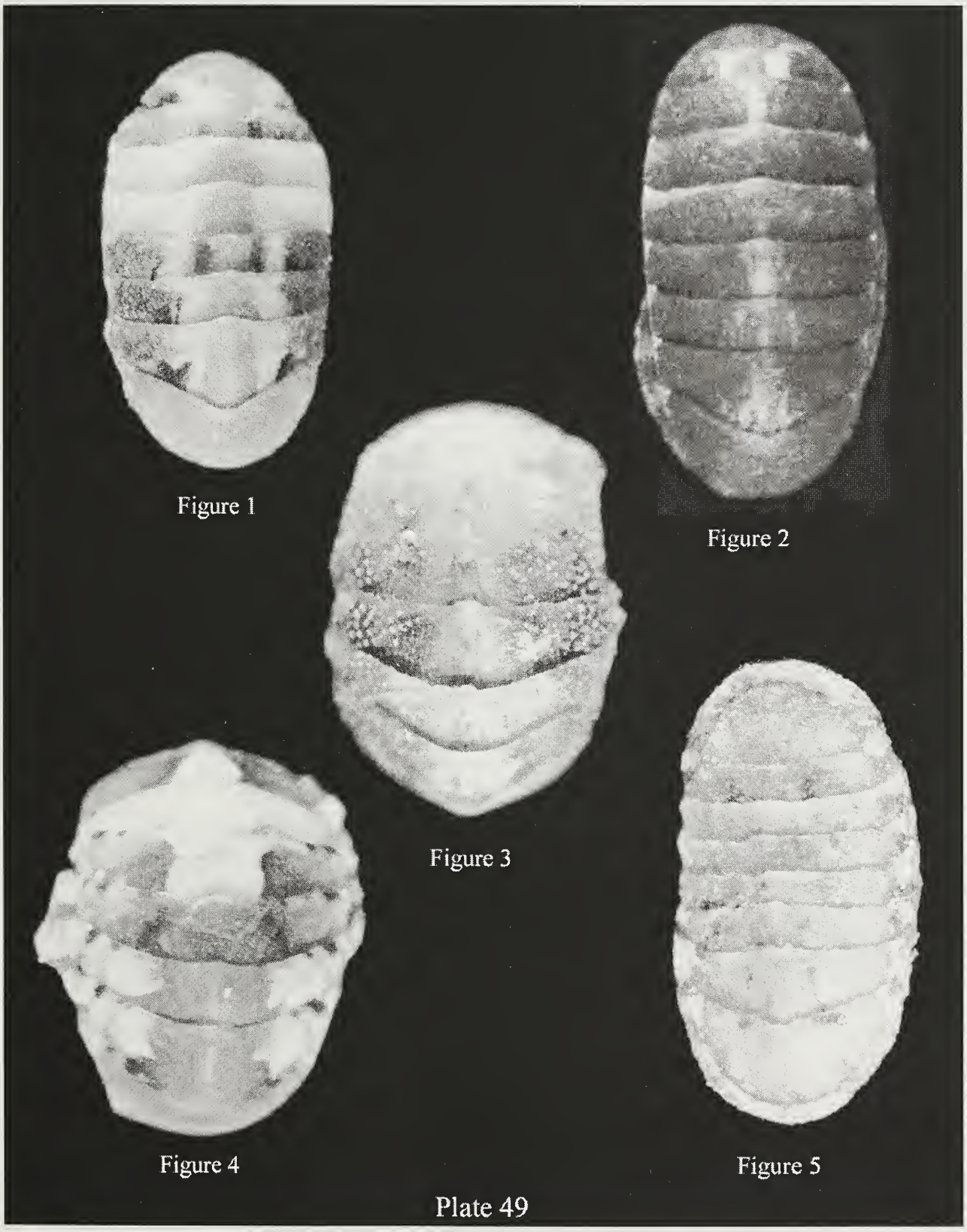

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Plate 49

Color Plate 1

Figure 1 *Pinctata mazatlanica* (Hanley, 1856).
Isla de Malpelo, Colombia, "Off and On Bay" (03°59.930'N, 81°36.907'W), living, attached to rock, 12 to 23 m (40-77 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 136.0 mm.

Figure 2 *Nodipecten arthriticus* (Reeve, 1853).
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), living, sloping sand and rubble, 24.0 m (80 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 98.0 mm.

Figure 3 *Serpulorbis margaritaceus* (Chenu, 1844, *ex* Rousseau MS).
Isla de Malpelo, Colombia, "Bombs Away" (03°59.922'N, 81°36.502'W), live, attached to underside of rock, 17.0 m (55 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 26.8 mm (coiled).

Figure 4 *Erosaria albuginosa* (Gray, 1825).
Isla de Malpelo, Colombia, "Bombs Away" (03°59.922'N, 81°36.502'W), live, on eggs attached to underside of rock, 17.0 m (55 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 28.3 mm.

Figure 5 *Pseudocypraea adamsonii* (Sowerby, 1832).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.160'N, 81°36.745'W), living, on underside of rock, 20 m (64 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 27 March 1998. Size: 11.3 mm, largest specimen of the three.

Figure 6 *Cypraecassis tenuis* (Wood, 1828).
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), live, buried in sand between rocks, 14 m (45 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 118.2 mm.

Color Plate 2

Figure 1 *Cymatium* (*Monoplex*) *macrodon* (Valenciennes, 1832).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.143'N, 81°36.667'W), live, on underside of rock, 21 m (70 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 28 March 1998. Size: 60.6 mm.

Figure 2 *Epitonium* (*Asperiscala*) *billeeanum* (DuShane & Bratcher, 1965).
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.136'N, 81°36.639'W), living on host *Tubastrea* sp., 7.5 m (25 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: 17.1 mm.

Figure 3 *Melanella* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), living on host holothurian sp., 18 to 30 m (60 to 100 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 7.0 mm.

Figure 4 *Muricopsis* (*Muricopsis*) *westonensis* Myers & D'Attilio, 1990.
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), two of nine specimens living on underside of same dead coral head, 21 m (70 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 14.5 to 26.4 mm (all nine specimens have an immature inner and outer lip).

Figure 5 *Coralliophilidae* sp. 1.
Isla de Malpelo, Colombia, (04°00.00'N, 81°36.00'W), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, March 2000. Unable to positively identify figured specimen in K.L.K. collection. Smaller specimens commonly found living on base of *Tubastrea* sp. (35 to 60 ft).

Figure 6 *Colubraria* (*Coluraria*) *ochsneri* Hertlein & Allison, 1968.
Isla de Malpelo, Colombia, "Scuba" South Rocks (03°59.628'N, 81°36.841'W), live, nine specimens on same egg mass attached to underside of rock, 27.0 m (90 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 29 March 1998. Size: ranging from 22.5 to 26.1 mm (protoconch missing).

Color Plate 3

Figure 1 *Cantharus* sp. 1.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, on underside of rock, 18 to 30 m (60 to 100 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 23.6 mm.

Figure 2 *Engina tabogaensis* Bartsch, 1931.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), living in sand between rocks, 14 m (45 ft), H_2O 68-72°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 14 March 2000. Size: 11.5 mm.

Figure 3 *Zafrona incerta* (Stearns, 1892).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, on underside of rock, 18 to 30 m (60 to 100 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 6.3 mm (juvenile).

Figure 4 *Persicula pulchella* (Kiener, 1834).
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, on underside of rock in sand, 30 m (100 ft), H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 6.1 mm. Note: A bevy of live juvenile specimens of *P. pulchella* were found inside a sponge sp., K.L. Kaiser Coll. (wet, w/ sponge).

Figure 5 *Persicula* sp. 1.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.115'N, 81°36.651'W), live, in clean sand under rock, 15 m (50 ft), H_2O 80°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 7.9 mm.

Figure 6 *Conus* (*Cylinder*) *dalli* Stearns, 1873.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.143'N, 81°36.667'W), living, buried in sand under rock, 18 to 31 m (60 to 103 ft), H_2O 78°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 28 March 1998. Size: left, 30.4 mm; right, 38.3 mm.

Color Plate 4

Figure 1 *Hypselodoris agassizii* Bergh, 1894.
Isla de Malpelo, Colombia, "Coral Gardens" (03°59.226'N, 81°36.247'W), live, on rubble, 44 m (144 ft), SCUBA, H_2O 68-72°F, leg. C.W. Bryce, diving from M/V *The Inzan Tiger*, 15 March 2000. Size: 15.0 mm.

Figure 2 *Hypselodoris lapislazuli* (Bertsch & Ferreira, 1974).
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, on rubble, 48 m (157 ft), SCUBA, H_2O 68-77°F, leg. C.W. Bryce, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 20.0 mm.

Figure 3 *Chromodoris baumanni* Bertsch, 1970.
Isla de Malpelo, Colombia, "Off and On Bay" (04°00.115'N, 81°36.651'W), live, basalt rocks and sand, 16 m (52 ft), H_2O 80°F, leg. C.W. Bryce, diving from M/V *The Inzan Tiger*, 26 March 1998. Size: 5.0 mm.

Figure 4 *Peltodoris mullineri* Millen & Bertsch, 2000.
Isla de Malpelo, Colombia, "Tiger Mount" (04°00.44'N, 81°36.09'W), live, in dead *Ostrea* sp. on sand and rubble, 30 to 44 m (100 to 144 ft), SCUBA, H_2O 68-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 11 March 2000. Size: 60.0 mm.

Figure 5 *Dendrodoris albobrunnea* Allen, 1933.
Isla de Malpelo, Colombia, "Hammerwall" (04°00.42'N, 81°36.25'W), live, under rock, 25 m (82 ft), H_2O 68-77°F, leg. C.W. Bryce, diving from M/V *The Inzan Tiger*, 13 March 2000. Size: 55.0 mm.

Figure 6 *Berthellina engeli* Gardiner, 1936.
Isla de Malpelo, Colombia, "Bombs Away" (03°59.922'N, 81°36.502'W), live, on underside of rock, 30 m (98 ft), H_2O 80°F, leg. C.W. Bryce, diving from M/V *The Inzan Tiger*, 30 March 1998. Size: 30.0 mm.

Color Plate 5

Figure 1 *Navanax aenigmaticus* (Bergh, 1894).
Isla de Malpelo, Colombia, "Coral Gardens" (04°00.226'N, 81°36.247'W), live, on sand at base of coral head, 38 m (125 ft), SCUBA, H_2O 82°F, leg. C.W. Bryce, diving from M/V *The Inzan Tiger*, 31 March 1998. Size: 55.0 mm.

Figures 2, 3 *Phestilla panamica* Rudman, 1982.
Isla de Malpelo, Colombia, "Widow Maker", South Rocks (03°59.816'N, 81°36.904'W), live, under coral head on ledge, 25 m (82 ft), H_2O 78°F, leg. C.W. Bryce, diving from M/V *The Inzan Tiger*, 28 March 1998. Size: 25.0 mm.

Figure 4 *Octopus* cf *hubbsorum* Berry, 1953 (female, juvenile).
Isla de Malpelo, Colombia, "Tiger Mount", (04°00.44'N, 81°36.09'W), under rocks and barnacle masses, 17 m (55 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger,* 13 March 2000. SBMNH 345685, DNA #7. Size: 12 mm ML.

Figure 5 *Octopus* cf *hubbsorum* Berry, 1953 (female, juvenile).
Isla de Malpelo, Colombia, "Tiger Mount", (03°59.226'N, 81°36.247'W), on slope with turnable scree and dead *Pavona* in sand, 18 m (60 ft), H_2O 61-77°F, leg. K.L. Kaiser, diving from M/V *The Inzan Tiger*, 13 March 2000. SBMNH 345686. Size: 16 mm ML.

Figure 6 Sea fan.
Isla de Malpelo, Colombia, (04°00'N, 81°36'W), H_2O 68-77°F, diving from M/V *The Inzan Tiger*, March 2000, host to *Neosimia* sp. Specimen not collected.

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

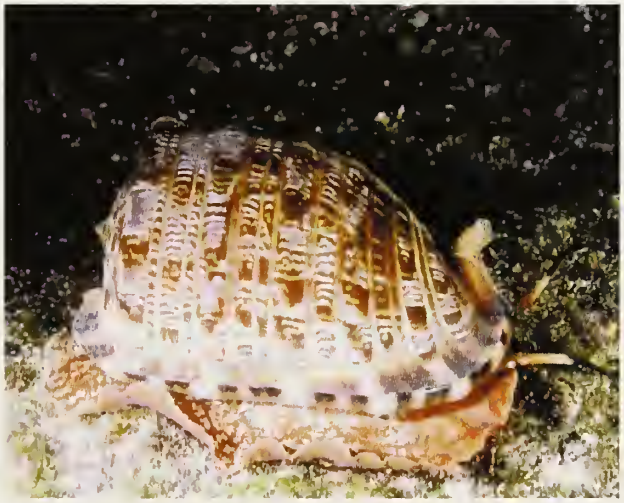

Figure 6

Color Plate 1

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Color Plate 2

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Color Plate 3

Figure 1

Figure 2

Figure 3

Figure 4

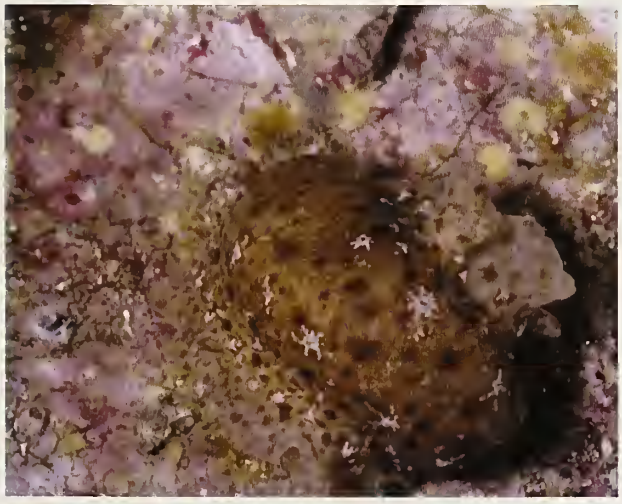

Figure 5

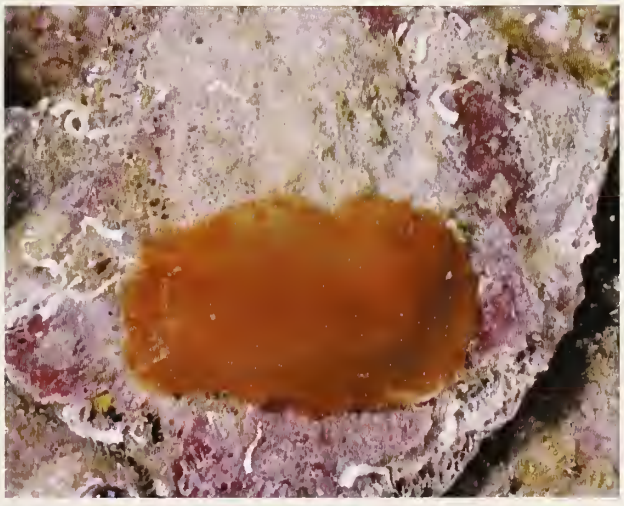

Figure 6

Color Plate 4

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

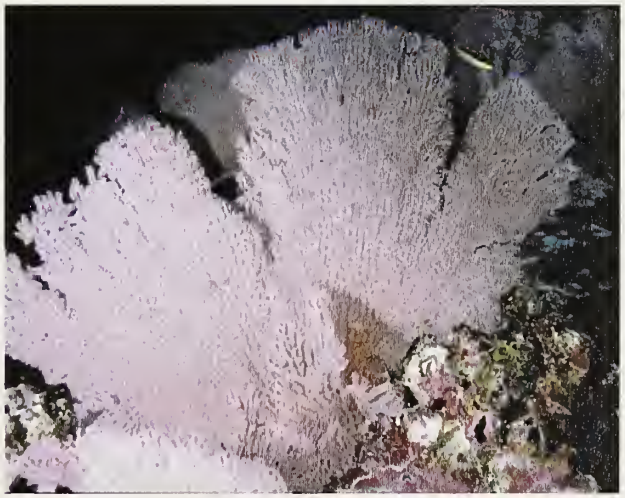

Figure 6

Color Plate 5

INDEX

Acanthais, 25
Acanthina, 25
ACANTHOCHITONIDAE, 31
acapulcanum, Epitonium, 18
acicula, Creseis, 30
aculeata, Crepidula, 20
acuticostatus, Parviturbo, 16
adamsonii, Pseudocypraea, 22
aenigmaticus, Navanax, 29
aequalis, Neosimnia, 22
aequinoctialis, Zonaria, 21
agapea, Nuculana, 32
agassizi, Hypselodoris, 30
agassizii, Borsonella, 35
agassizii, Solemya, 32
AGLAJIDAE, 29
agujanus, Polinices 34
albicomatus, Cadulus, 35
albobrunnea, Dendrodoris, 7, 31
albuginosa, Erosaria, 21
alisonae, Blasicrura, 21
Alvania, 17
Alvania sp. 1, 17
Alvania sp. 2, 17
AMATHINIDAE, 29
Anachis sp. 1, 27
Anachis sp. 2, 27
angulatus, Fossarus, 18
annettae aequinoctialis, Zonaria, 21
antiquatus panamensis, Hipponix, 19
aperta, Vanikoro, 20
arabicula, Mauritia, 21
ARCHITECTONICIDAE, 29
ARCIDAE, 12
areolatus, Pleurobranchus, 30
ARGONAUTIDAE, 35
aristata, Lithophaga, 12
arthriticus, Nodipecten, 14
assimilata, Seila, 23
ATLANTIDAE, 20
aulaca, Aforia, 35
Barbatia, 12
Barleeia sp. 1, 17
Barleeia sp. 2, 17
BARLEEIDAE, 17
baumanni, Chromodoris, 30
benthalis, Adelomelon, 34
benthima, Cryptogemma 34
bifasciata, Barleeia, 17
biliratus, Caducifer, 26
billeeanum, Epitonium, 19
biserialis, Acanthais, 24
Bivalve sp. 1, 15
Bivalve sp. 2, 15
Bivalve sp. 3, 15
BIVALVIA, 12, 32
Borsonia, 35
brevidentata, Acanthais, 25
BUCCINIDAE, 26
BURSIDAE, 22
CAECIDAE, 18
Caecum sp. 1, 18
CALYPTRAEIDAE, 20
Cantharus sp. 1, 7, 26
CAPULIDAE, 20
Capulus sp. 1, 20
CARINARIIDAE, 20
carpenteri, Mitromorpha, 28
CASSIDAE, 22
castaneus, Phymorhynchus, 35
CAVOLINIIDAE, 30
cepacea, Cheilea, 20
CEPHALOPODA, 31, 35
CERITHIOPSIDAE, 22
Cerithiopsis sp. 1, 22
Cerithiopsis sp. 2, 22
Cerithiopsis sp. 3, 22
Cerithiopsis sp. 4, 22
Cerithiopsis sp. 5, 22
Cerithiopsis sp. 6, 23
Cerithiopsis sp. 7, 23
Cerithiopsis sp. 8, 23
cerodes, Modulus, 18
cervinetta, Macrocypraea, 21
Chaetopleura sp. 1, 31
CHAMIDAE, 15
Choristes carpenteri, 34
CHROMODORIDIDAE, 30
Chromodoris, 30
Chromodoris sp. A, 30
cinis, Caducifer, 26
clandestina, Rissoina, 17
clarinda, Phymorhynchus, 35
Clio sp. 1, 30
cocosensis, Favartia, 7, 24
columbella, 28
columbella, Erato, 21
columbella, Hespererato, 21,28
COLUMBELLIDAE, 26
compressa, Tindaria, 33
compressus, Limopsis, 33
Condylocardia sp. 1, 7, 15
Condylocardia sp. 2, 15
CONDYLOCARDIIDAE, 14
CONIDAE, 28
conspersa, Littorina, 17
Conus, 28
convexa, Metaxia, 23
Coralliophila, 26
Coralliophila sp., 25
CORALLIOPHILIDAE, 25
Coralliophilidae sp. 1, 7, 26
coronata, Anachis, 27
corrugata corrugata, Bursa, 22
corrugata, Cheilea, 20
corrugulatum, Caecum, 18
costata, Babelomurex, 26
Costoanachis ?coronata, 27
crenata, Mitra, 28
Crepidula sp. 1, 20
cumingii, Coralliobia, 26
CUSPIDARIIDAE, 33
CYLICHNIDAE, 29
Cylichnidae sp. 1, 29
Cylichnidae sp. 2, 29
Cypraea, 21
CYPRAEIDAE, 21
CYSTISCIDAE, 27
Cystiscus sp. 1, 27
dalli, Conus, 28
dalli, Limopsis, 33
dalli, Parvanachis, 27
dalli, Triphora, 23
DENDRODORIDIDAE, 31
Dendropoma sp. 1, 18
DENTALIIDAE, 35
Diacria sp. 1, 30
diadema, Conus, 28
diantha, Eulithidium, 16
digueti, Condylocardia, 15
DISCODORIDIDAE, 31
eburnea, 18
effusa, Rissoina, 17
effusa, Mitra, 28
Elachisina, 18
ELACHISINIDAE, 17
electilis, Cymatioa, 15
elegans, Diacavolinia, 30
Elephantulum sp. 1, 18
engeli, Berthellina, 30
EPITONIIDAE, 18
Epitonium sp. 1, 19
Epitonium sp. 2, 19
equatorialis, Calliotropis, 34
equatorialis, Poromya, 34
Erato, 21
ericana, Folinia, 17
erosina, Borsonella, 35
EULIMIDAE, 19, 34
Eulimidae sp. 1, 19
Eulimidae sp. 2, 19
Eulimidae sp. 3, 19
Eulimidae sp. 4, 19
Eulimidae sp. 5, 19
eversoni, Chicoreus, 7, 23
Fartulum sp. 1, 18
Fartulum sp. 2, 7, 18
Fartulum sp. 3, 18
Fasciolaria, 27
FASCIOLARIIDAE, 27, 34
Fasciolariidae sp. 1, 27
ferruginea, Mitra, 7, 28
fisheri, Ostrea, 14
FISSURELLIDAE, 16
folium, Dendrostrea, 6, 13
frisbeyae, Vermicularia, 18
fungina, Tylodina, 29
Fusinus, 34
galapagana, Vanikoro, 20
garretti, Myonera, 34

Gastropod sp. 1, 32
GASTROPODA, 15, 34
gaudichaudi, Atlanta, 20
Gemmula, 34, 35
Gibberula sp. 1, 27
Gibberula sp. 2, 27
Gibberula sp. 3, 27
Gibberula sp. 4, 27
glabriforme, Fartulum, 18
gliriella, Herviera, 7, 29
goniura, Malletia, 33
gradata, Acar, 12
granularis, Bursa, 6, 22
Granulina sp. 1, 28
Graphis sp. 1, 29
grayanus, Hipponix, 19
GRYPHAEIDAE, 14
hastula, Aspella, 23
Hemiliostraca sp. 1, 19
Hemiliostraca sp. 2, 19
herilda, Leucosyrinx, 35
Hespererato, 28
hindsii, Babelomurex, 26
Hipponicidae sp. 1, 20
Hipponicidae sp. 2, 20
Hipponicidae sp. 3, 20
Hipponicidae, 19
Hipponix, 4
Homalopoma sp. 1, 16
hubbsorum, 32
hubbsorum, Octopus, 23, 32
hyotis, Hyotissa, 14
imperatrix, Acanthochitona cf., 31
inaequalis, Diodora, 16
incerta, Zafrona, 27
incisa, Favartia, 24
inconspicua, Alvania, 17
inflata, Atlanta, 20
inflata, Limacina, 30
iridescens, Ostrea, 13
isabellamexicana, Luria, 21
Ischnochiton sp. 1, 31
Ischnochiton sp. 2, 31
Ischnochiton sp. 3, 31
Ischnochiton sp. 4, 31
ISCHNOCHITONIDAE, 31
Iselica sp. 1, 29
isocardia, Globivenus, 15
ISOGNOMONIDAE, 13
jamesi, 15
jamesi, Semele, 15
JANTHINIDAE, 19
janus, Isognomon 13
japonica, Carinaria, 20
johnsoni, Acharax, 32
juarezi, Limopsis, 33
kanoni, Seila, 23
kelseyi, 16
kelseyi, Pelycidion, 16
keraudrenii, Oxygyrus, 20
krebsii, Dendrodoris, 31
laevigata, Leiosolenus, 12
lapislazuli, Hypselodoris, 7, 31
LASAEIDAE, 15
Leda, 32
leonilda, Yoldiella, 33
Leucosyrinx, 35
LIMACINIDAE, 30
LIMIDAE, 13
LIMOPSIDAE, 33
linguaefelis, Spondylus, 6, 14
Lirobarleeia sp. 1, 17
Lirobarleeia sp. 2, 17
Lirobarleeia sp. 3, 17
LITTORINIDAE, 17
longirostris longirostris, Cavolinia, 30
Lopha, 13
lowei lowei, Pterotyphis, 24
lucasensis, 26
lucasensis, Colubraria, 26
LUCINIDAE, 14
Lucinidae sp. 1, 14
lugubris, Morula, 24
lugubris, Phestilla, 31
lugubris, Trachypollia, 24
Lyropecten, 14
macleani, Coralliophila, 25
macrodon, Cymatium, 22
mactroides, Dermatomya, 34
madreporarum, Quoyula, 26
MALLEIDAE, 13
MALLETIIDAE, 33
malpelonium, Amusium, 33
margaritaceus, Serpulorbis, 18
mazatlanica, Pinctada, 13
mazatlanicus, Heliacus, 29
megathyris, Dentalium, 35
Melanella sp. 1, 19
Melanella sp. 2, 19
Melanella sp. 3, 19
Melanella sp. 4, 19
melanostica, Steironepion, 27
meridionale, Propeamussium, 33
mexicana, Neilonella, 33
micaela, Bizetiella, 24
Mitrella sp.1, 27
Mitrella sp. 2, 27
MITRIDAE, 28
modesta, Nodilittorina, 17
MODULIDAE, 18
monodonta, 26
Morula, 24
mullineri, Peltodoris, 31
Muricanthus, 23
muricata, Neorapana, 25
MURICIDAE, 23
mutabilis, Arca, 12
MYTILIDAE, 12
NASSARIIDAE, 27
NATICIDAE, 20, 34
Naticidae sp. 1, 20
Naticidae sp. 2, 20
Naticidae sp. 3, 20
Naticidae sp. 4, 20
NEILONELLIDAE, 33
NEOLEPTONIDAE, 15
NERITIDAE, 16
neritoides, Coralliophila, 7, 25
Nucula, 32
NUCULANIDAE, 32
NUCULIDAE, 32
nux, 28
nux, Conus, 28
nux, Coralliophila, 25
ochsneri, Colubraria, 26
Odostomia sp. 1, 29
Odostomia sp. 2, 29
Odostomia sp. 3, 29
Odostomia sp. 4, 29
Olivella sp. 1, 27
OLIVELLIDAE, 27
Omalogyra sp. 1, 29
OMALOGYRIDAE, 29
Onoba sp. 1, 17
Onoba sp. 2, 17
OPISTHOBRANCHIA, 29
Orbitestella sp. 1, 29
ORBITESTELLIDAE, 29
osculans, Plesiothyreus, 17
OSTREIDAE, 13
Ostreidae sp. 1, 14
Ostreidae sp. 2, 14
Ostreidae sp. 3, 14
Ostreidae sp. 4, 14
Ostreidae sp. 5, 14
ovalis, Vesicomya, 33
OVULIDAE, 22
Pachystremiscus sp. 1, 16
Pachystremiscus sp. 2, 16
Pachystremiscus sp. 3, 16
Pachystremiscus sp. 4, 16
Pachystremiscus sp. 5, 16
Pachystremiscus sp. 6, 16
Pachystremiscus sp. 7, 16
Pachystremiscus sp. 8, 16
pacifica, Argonauta, 35
pallida, Janthina, 19
panamense, Dentalium, 35
panamensis, Pseudochama, 15
panamensis, Hipponix, 19
panamensis, Limopsis, 33
panamica, 31
panamica, Phestilla, 31
panamina, Ennucula, 32
pansa, Plicopurpura, 24
pardoanus, Polinices, 34
parva, Coralliophila, 25
Pascula sp.1, 24
patula, Thais, 24
paulula, Opalia, 19
PECTINIDAE, 14
pellucida eburnea, Vermicularia, 18
peltoides, Williamia, 31
PELYCIDIIDAE, 16
Pelycidion, 16
peroni, Atlanta, 20
Persicula, 21
Persicula sp. 1, 28
Persicula sp. 2, 28

Persicula sp. 3, 28
perulus, Oppenheimopecten, 14
PHENACOLEPADIDAE, 17
Phestilla, 31
PHILOBRYIDAE, 12
PHOLADIDAE, 15
Pholadidae sp. 1, 15
Phylliroe sp. 1, 31
PHYLLIROIDAE, 31
pileare, Cymatium, 22
PINNIDAE, 13
Pinnidae sp. 1, 13
pintado pullata, Littoraria, 17
plana, Atlanta, 20
planatus, Pilosabia, 19
PLANAXIDAE, 18
planospira, Tribulus, 25
PLEUROBRANCHIDAE, 30
Pleuroploca, 27
Pleurotomella, 35
plumula, Lithophaga, 12
POLYPLACOPHORA, 31
pontonia, Nuculana, 32
POROMYIDAE, 34
princeps, Hexaplex, 23
princeps, Pleuroploca, 27
prismatica, Crassostrea, 13
prismatica, Striostrea, 13
prolongata, Janthina, 19
PROPEAMUSSIIDAE, 14, 33
Propeamussiidae sp. 1, 14
Propeamussiidae sp. 2, 14
pseudodon, Opeatostoma, 27
PTERIIDAE, 13
pulchella, Persicula, 7, 28
pulmoensis, 23
pulmoensis, Seila, 23
PULMONATA, 31
punctifissa, Diodora, 16
Purpura, 24
purpurascens, Conus, 28
pustulata, Jenneria, 22
pyramidalis, Aspella, 23
PYRAMIDELLIDAE, 29
pyrostoma, Engina, 26
quadratus, Isognomon, 13
quadratus, Perna, 13
quadridentata, Diacria, 30
RANELLIDAE, 22
recognitus, Isognomon, 13
reeveana, Barbatia, 12
regulus, Malleus, 13
rigida, Clathurella 29
rimuloides, Sinezona 16
ringens, Malea, 22
RISSOIDAE, 17
Rissoina sp. 1, 17
Rissoina sp. 2, 17
Rissoina sp. 3, 17
robertsi, Zonaria, 21
robillardi, Reliquiaecava, 26
rocasuciae, Coralliophila, 7, 25
rufa, Simnialena, 22
rufocaudatus, Exilioidea, 34
rufonotata, Pascula, 24
Sabinella sp. 1, 19
salebrosa, Vitularia, 24
sanguinolentus, Cantharus, 26
saturnalis, Diodora, 16
scabricosta, Nerita, 17
scabriuscula, Hespererato, 21
SCAPHOPODA, 35
SCISSURELLIDAE, 15
Scissurellidae sp. 1, 16
Scissurellidae sp. 2, 16
sedna, Glossodoris, 30
Seila, 23
Semele, 15
SEMELIDAE, 15
SEPIIDAE, 31
Sepiidae sp. 1, 32
setosa, Philobrya 12
shaskyi, Nassarius, 27
shaskyi, Rissoina, 19
similaris, Limatula, 13
Simnia, 22
Sinezona sp. 1, 16
SIPHONARIIDAE, 31
SIPHONODENTALIIDAE, 35
SKENEIDAE, 16
smirna, Tindaria, 33
Solariella, 34
Solariorbis sp. 1, 18
SOLEMYIDAE, 32
solida, Engina, 26
solida, Hyotissa, 14
solitarius, Pachystremiscus 7, 16
sparta, Tractolira, 34
speciosa, Mancinella, 24
SPONDYLIDAE, 14
squamosa, Timoclea, 15
stearnsii, Vesicomya, 33
Steiraxis, 35
stellatus, Trimusculus, 31
sterna, Pteria ,13
Stilifer sp. indet., 34
Stramonita, 24, 25
stricta, Rissoina, 17
subnodosus, Nodipecten, 14
suborbicularis, Kellia, 15
subtrigonum, Neolepton, 15
tabogaensis, Engina, 26
talpa, 6
talpa, Talparia, 6, 21
tenella, Limopsis, 33
tenuis, Cypraecassis, 22
TEREDINIDAE, 15
teres, Blasicrura, 21
teres pellucens, Cypraea, 21
TERGIPEDIDAE, 31
Thais, 24, 25
tiaratus, 28
tiaratus, Conus 28
TINDARIIDAE, 33
tokiokai, Atlanta, 20
TONNIDAE, 22
triangularis, Mancinella, 24
trichodes, Microdaphne, 29
TRIMUSCULIDAE, 31
Triphora sp. 1, 23
Triphora sp. 2, 23
Triphora sp. 3, 23
Triphora sp. 4, 23
Triphora sp. 5, 23
Triphora sp. 6, 23
TRIPHORIDAE, 23
tristis, Mitra, 28
TRIVIIDAE, 21
TROCHIDAE, 34
trochiformis, Limacina, 30
truncata, Malletia 33
tuberculata, Leucozonia 27
TURBINIDAE, 16
Turbonilla sp. 1, 29
turriculata, Atlanta, 20
TURRIDAE, 28, 34
Turridae sp. 1, 29
Turridae sp. 2, 29
turris, Fusinus, 27
TURRITELLIDAE, 18
TYLODINIDAE, 29
uncinata, Cavolinia, 30
VANIKORIDAE, 20
VENERIDAE, 15
VERMETIDAE, 18
Vermetidae sp. 1, 18
Vermetidae sp. 2, 18
Vermetidae sp. 3, 18
VESICOMYIDAE, 33
vincula, Katadesmia, 33
violacea, Coralliophila, 25
virgula conica, Creseis, 30
virgula constricta, Creseis, 30
virgula, Creseis, 30
VITRINELLIDAE, 18
Vitrinellidae sp. 1, 18
westonensis, Muricopsis, 7, 24
Xylophaga sp. 1, 15
Yoldia, 33
YOLDIIDAE, 33
Zanassarina sp. 1, 27
zeteki, Septifer, 13

SMITHSONIAN LIBRARIES
3 9088 01965 5547